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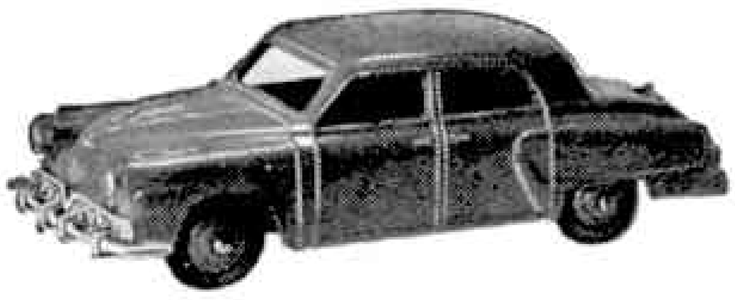

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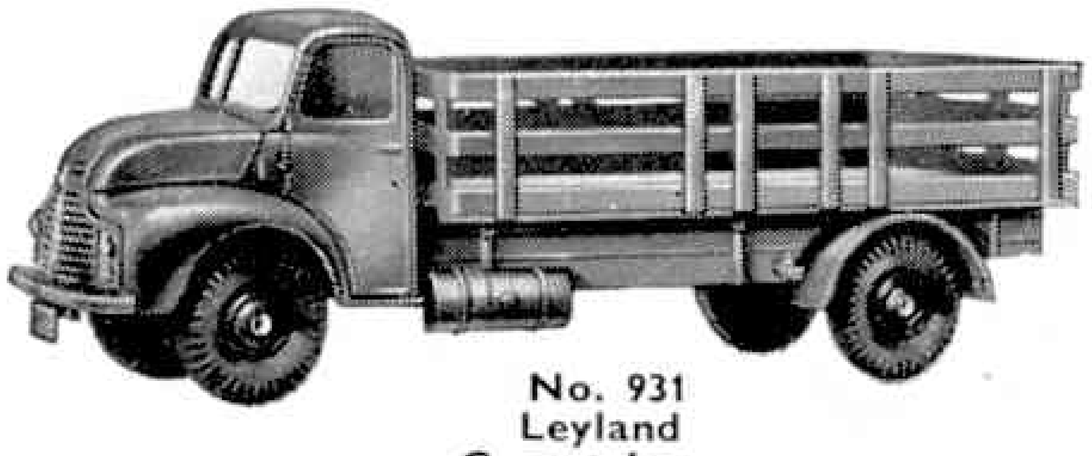

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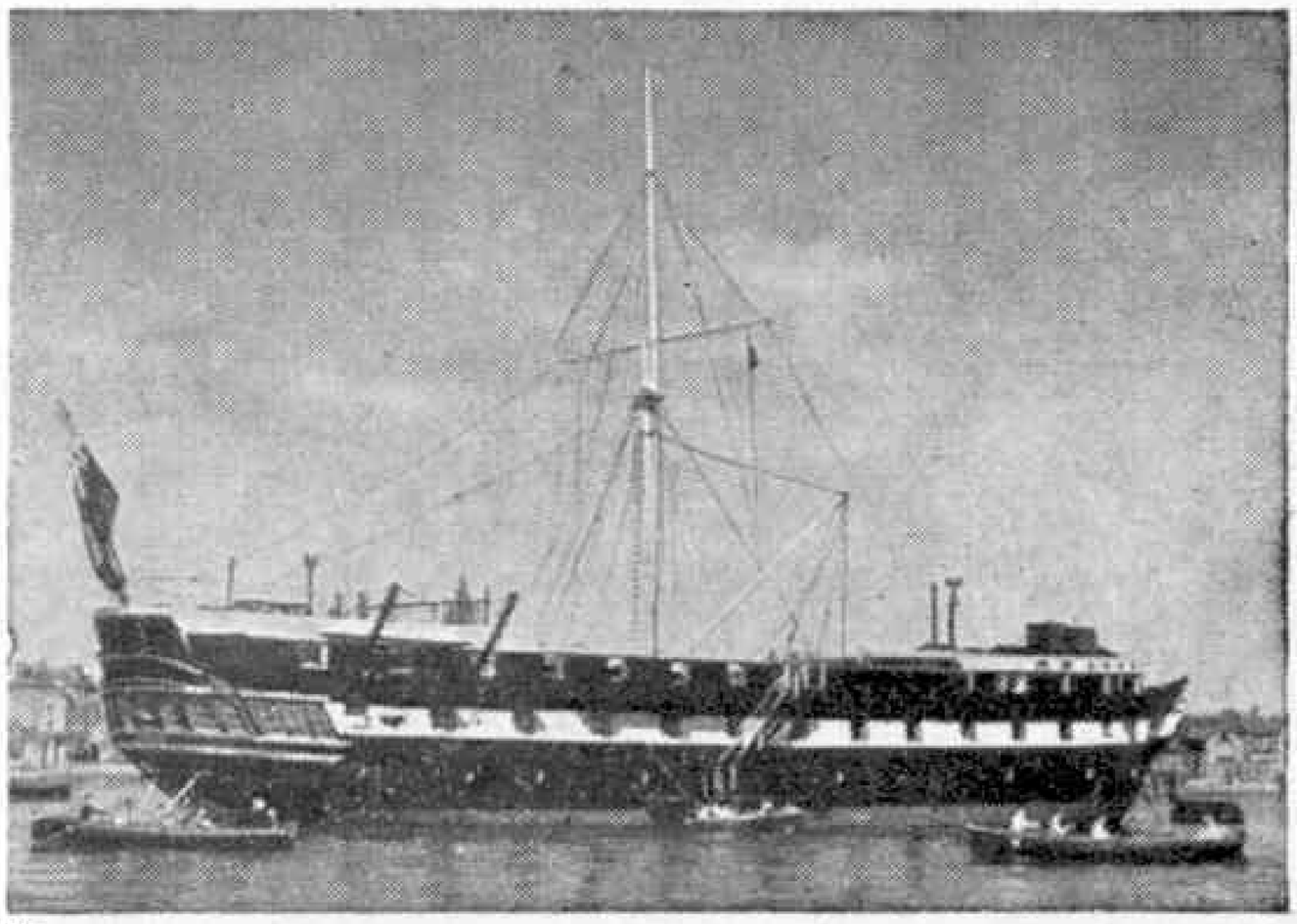

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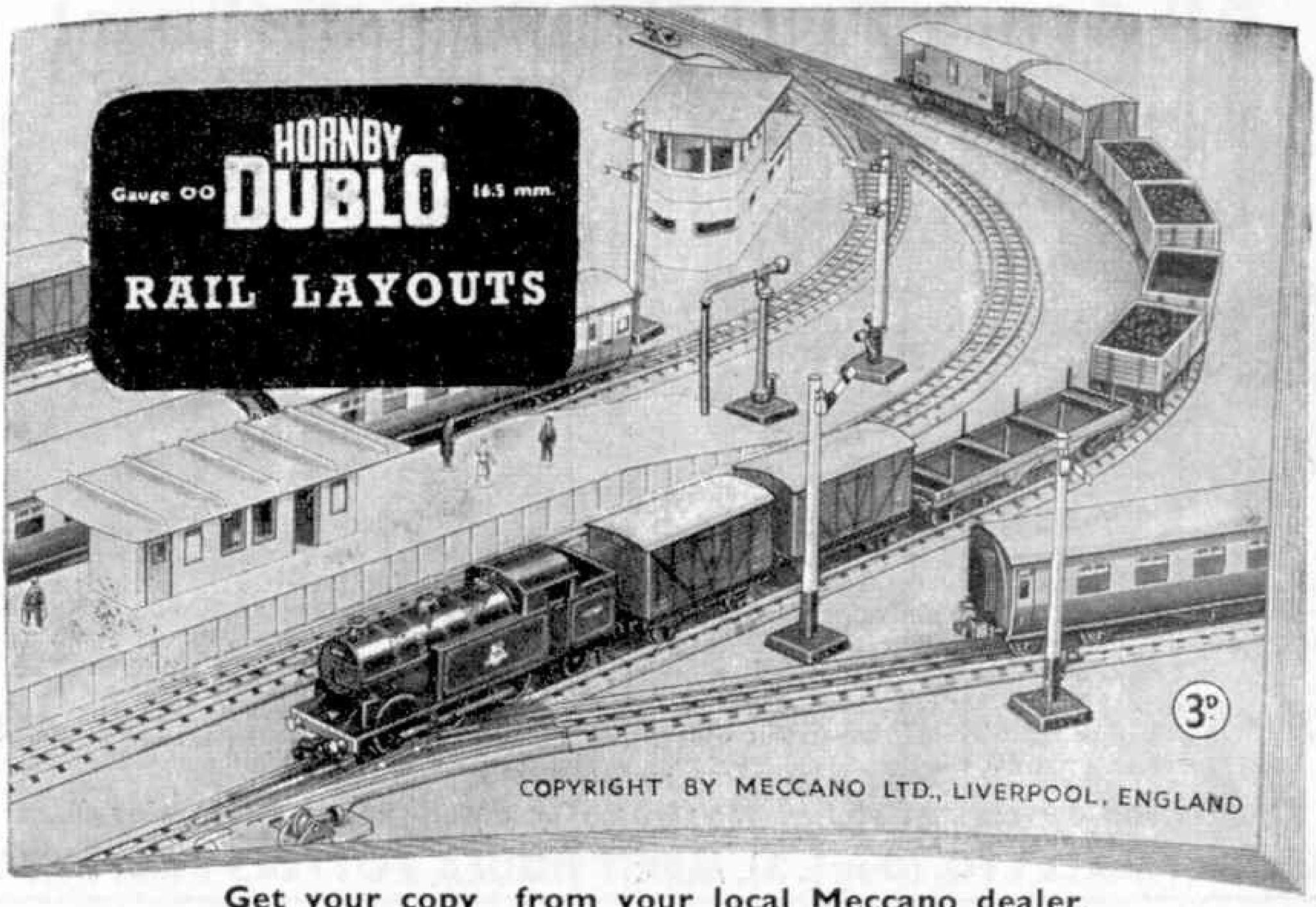

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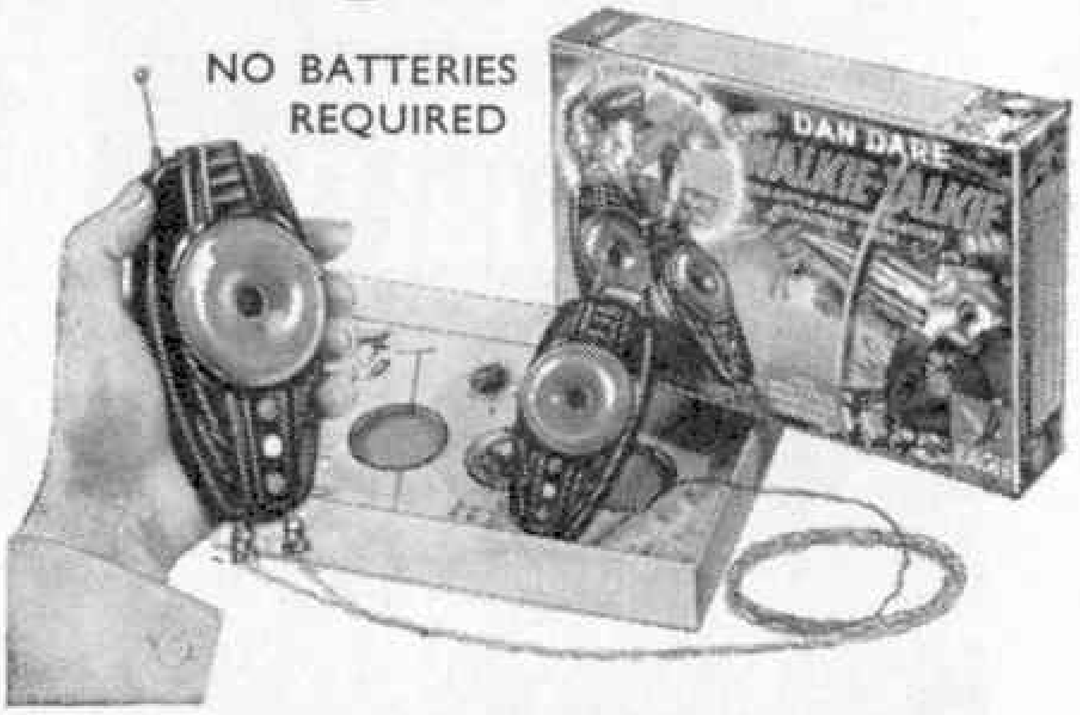

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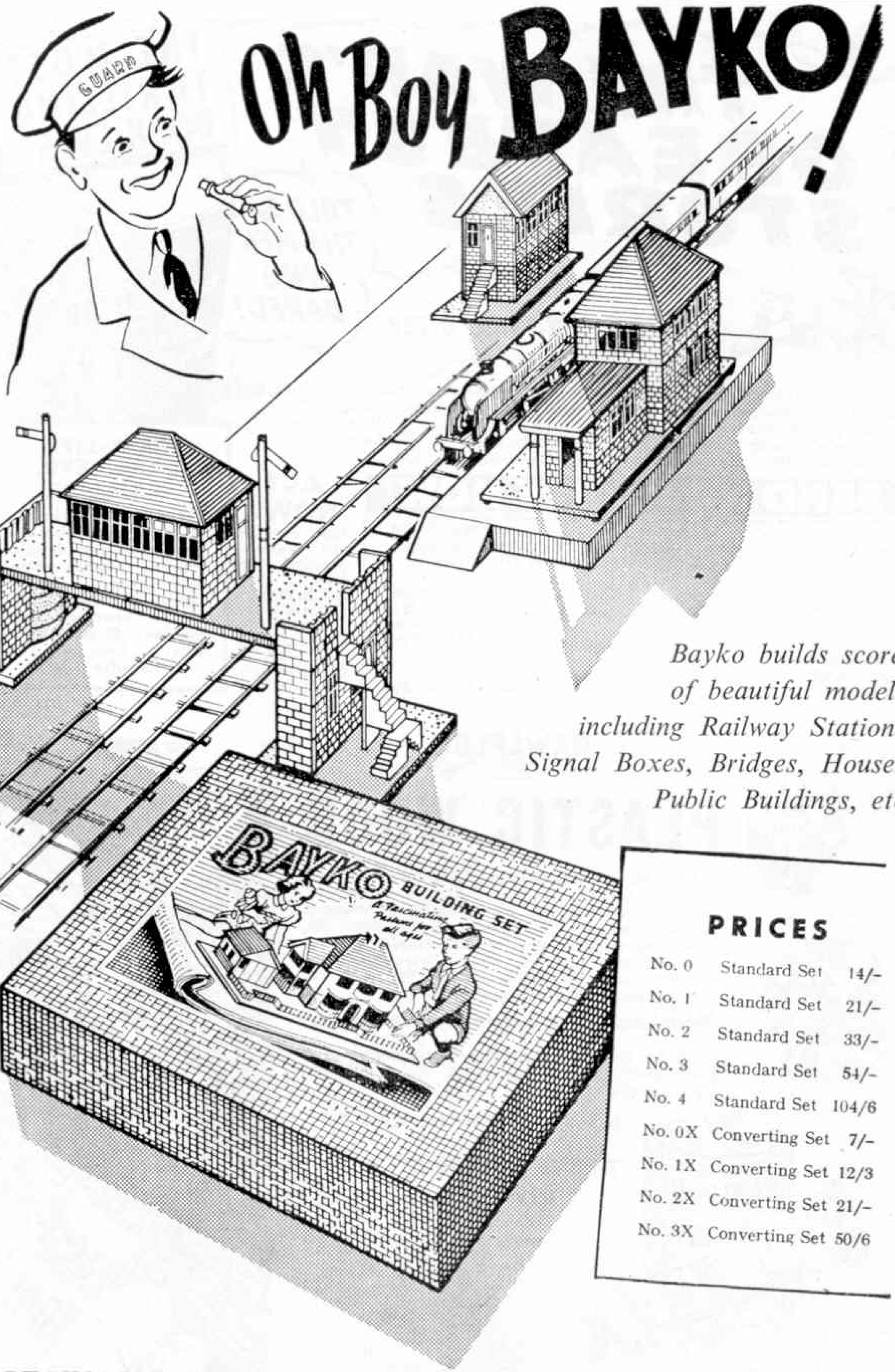

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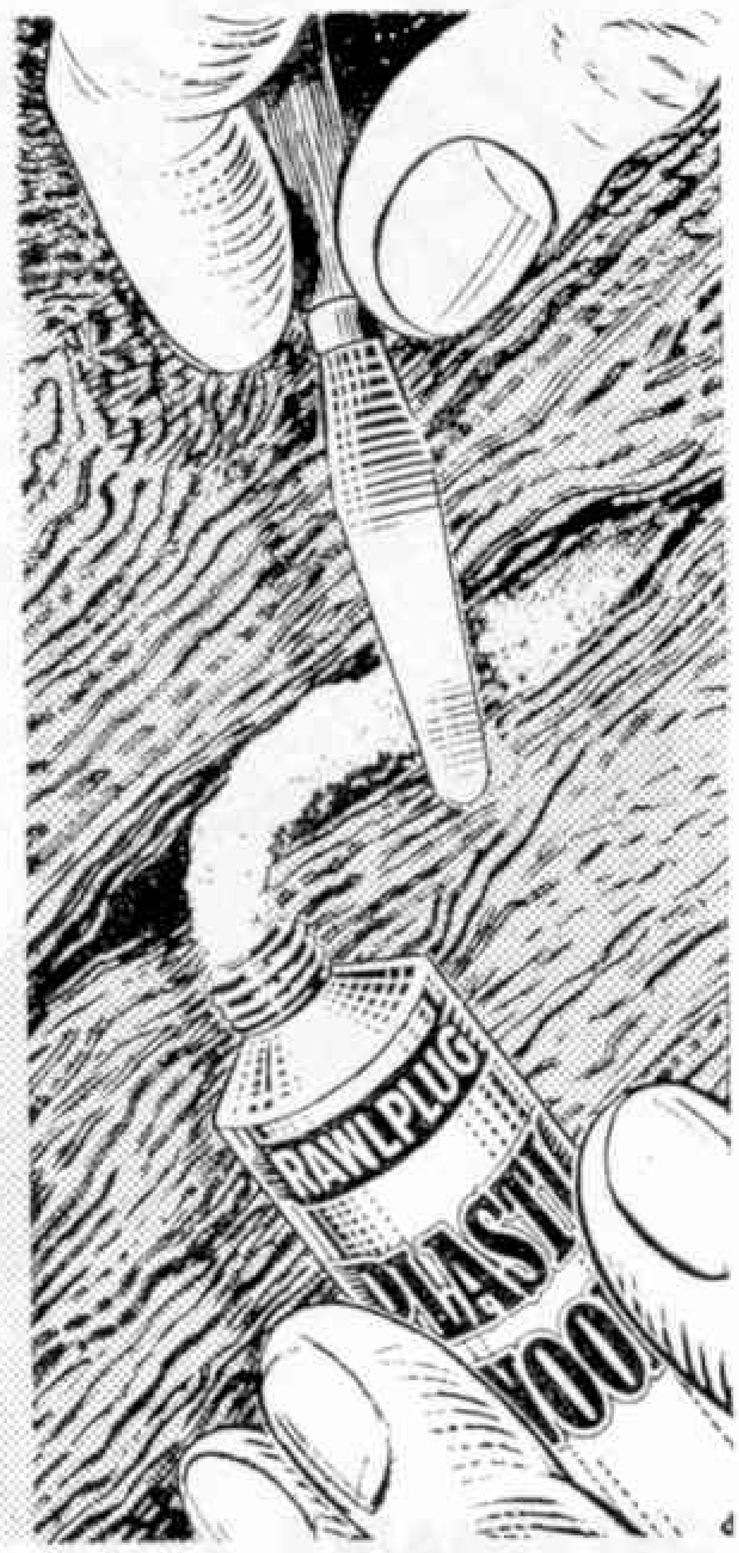

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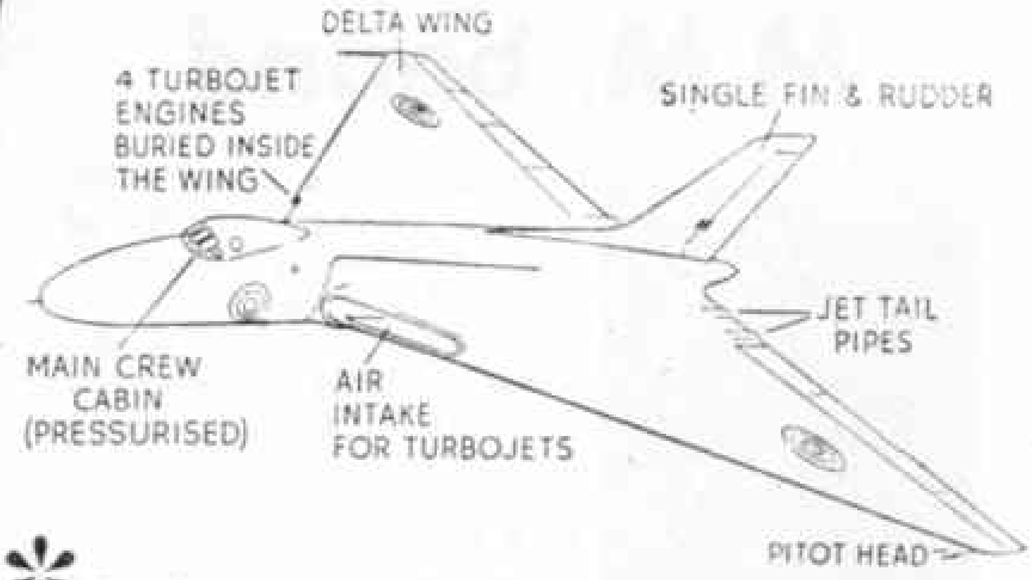

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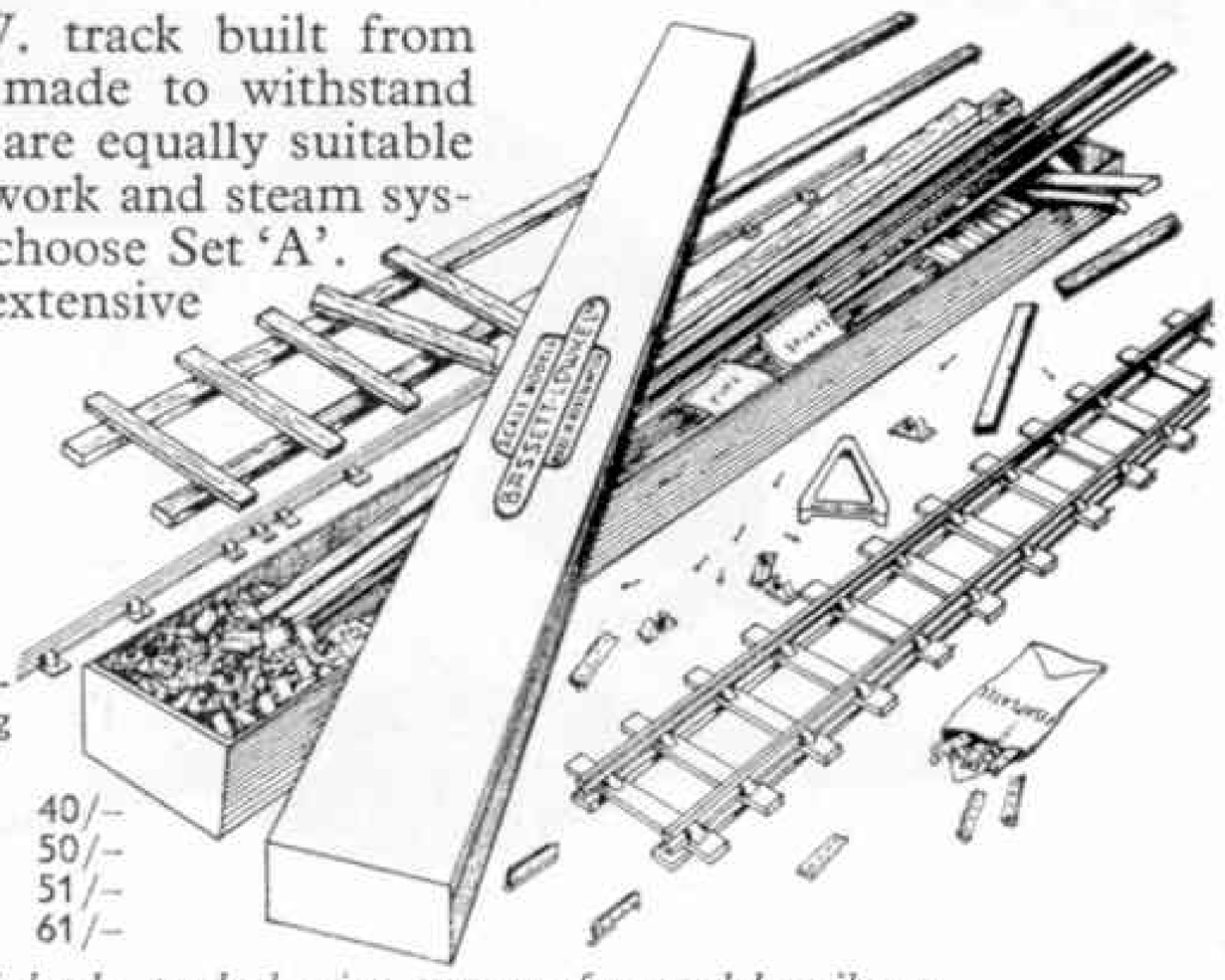

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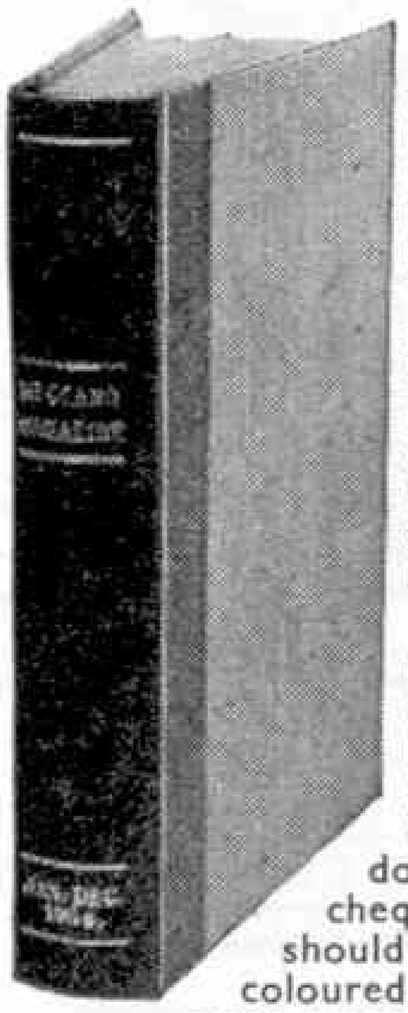

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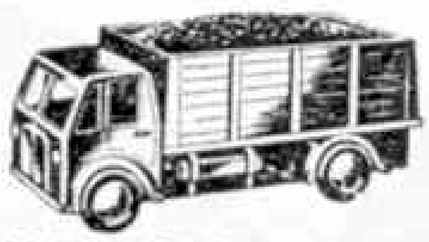

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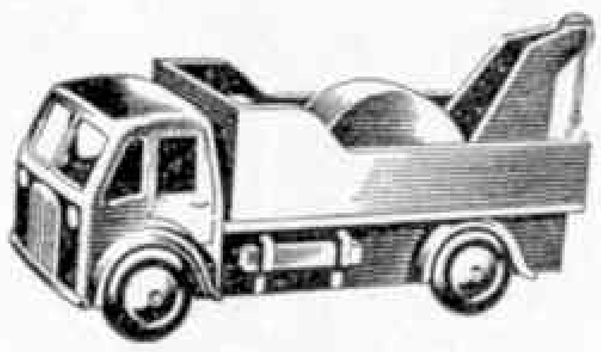

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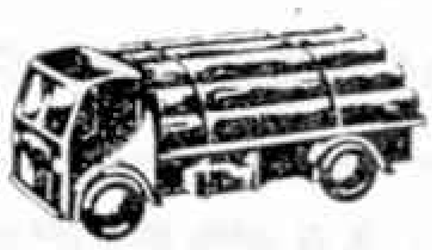

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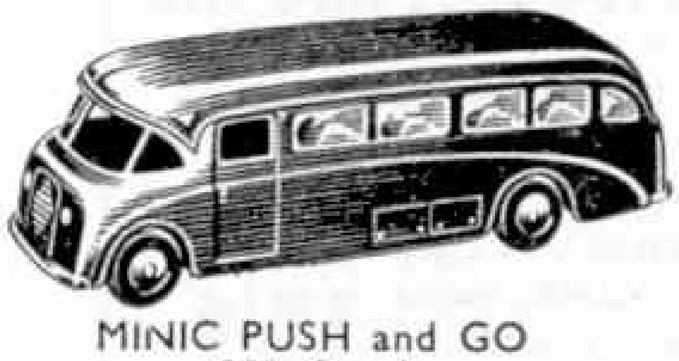

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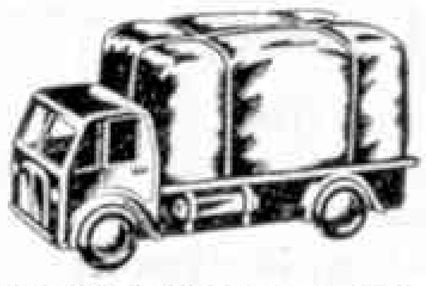

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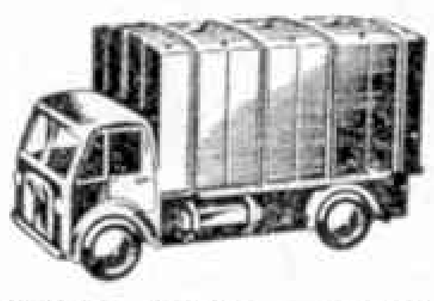

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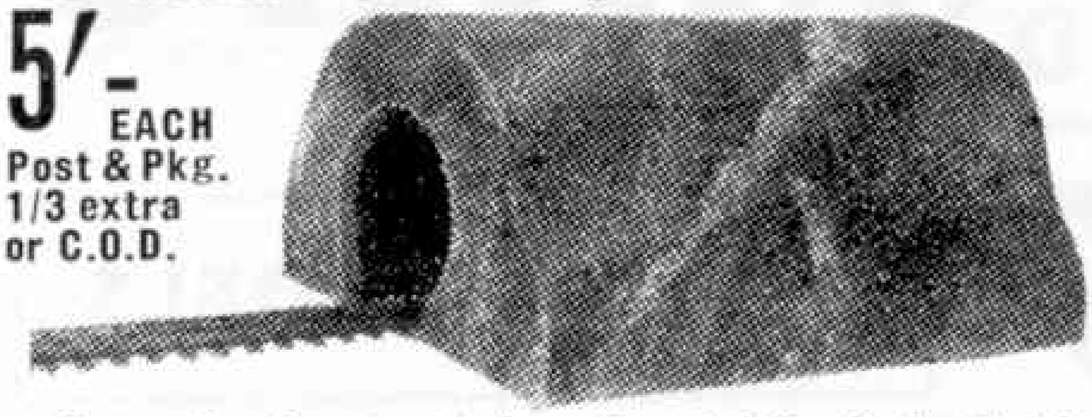

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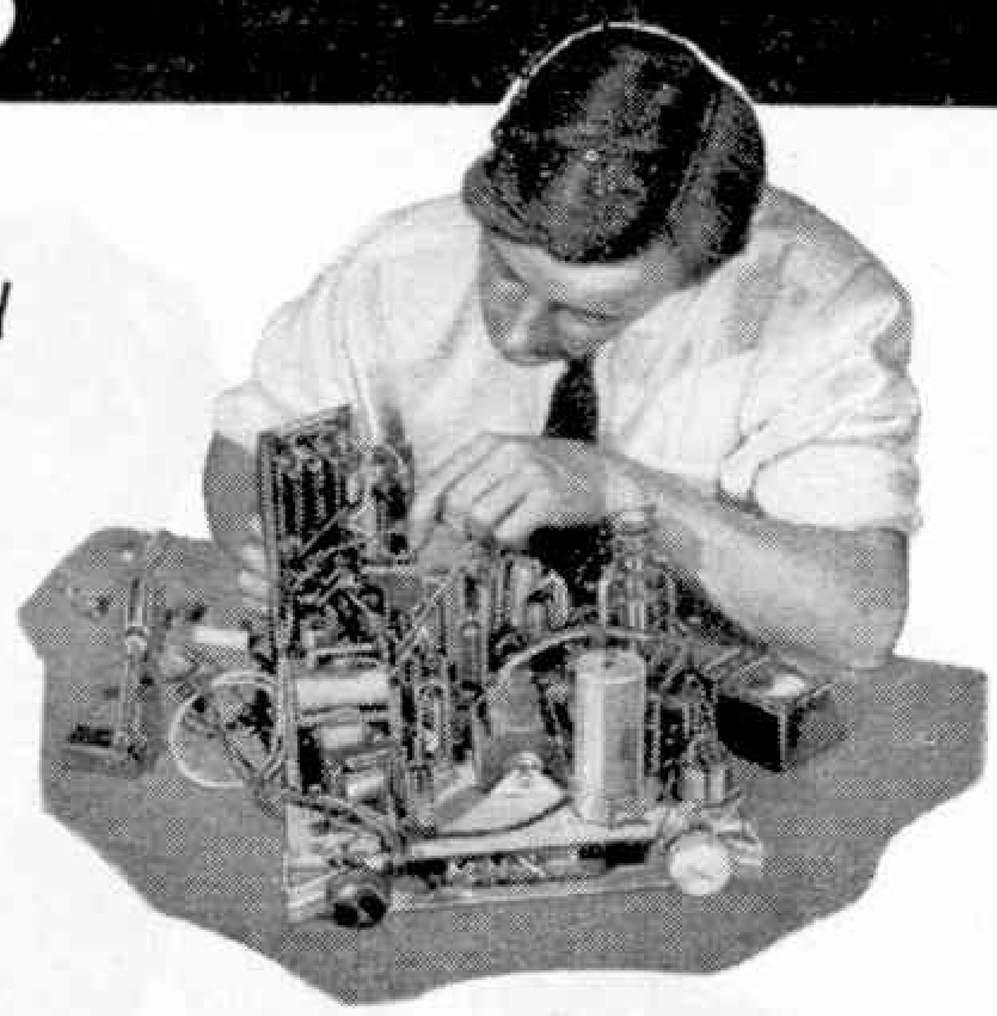

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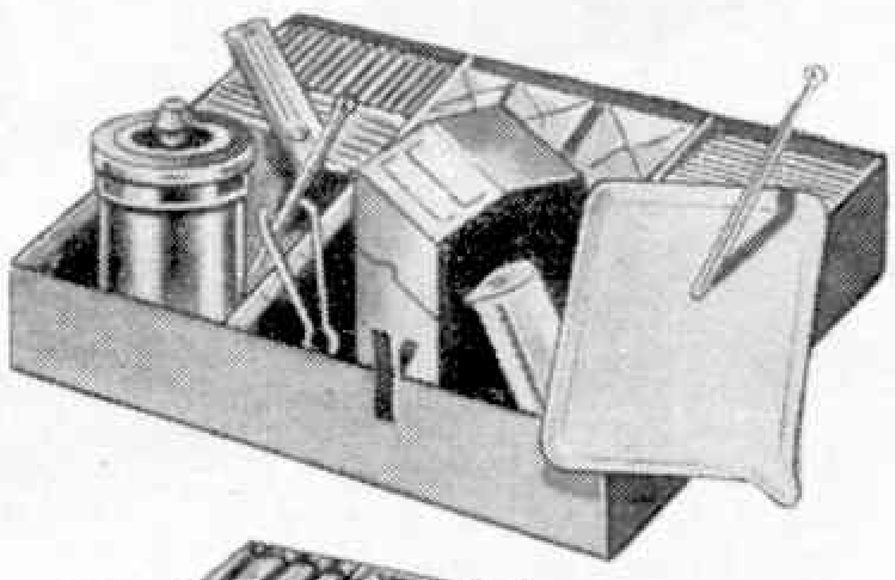

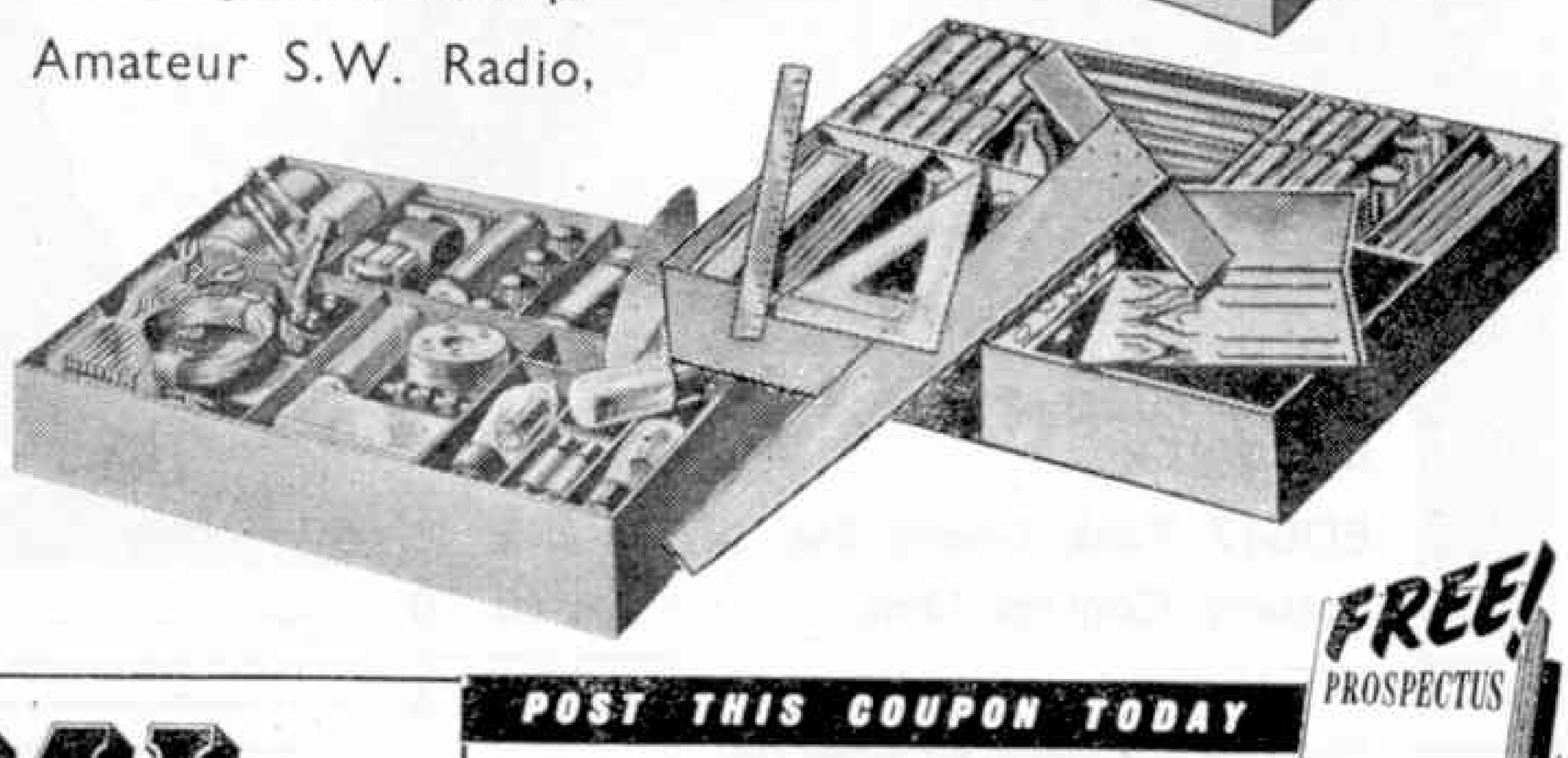

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MECCANO MAGAZINE

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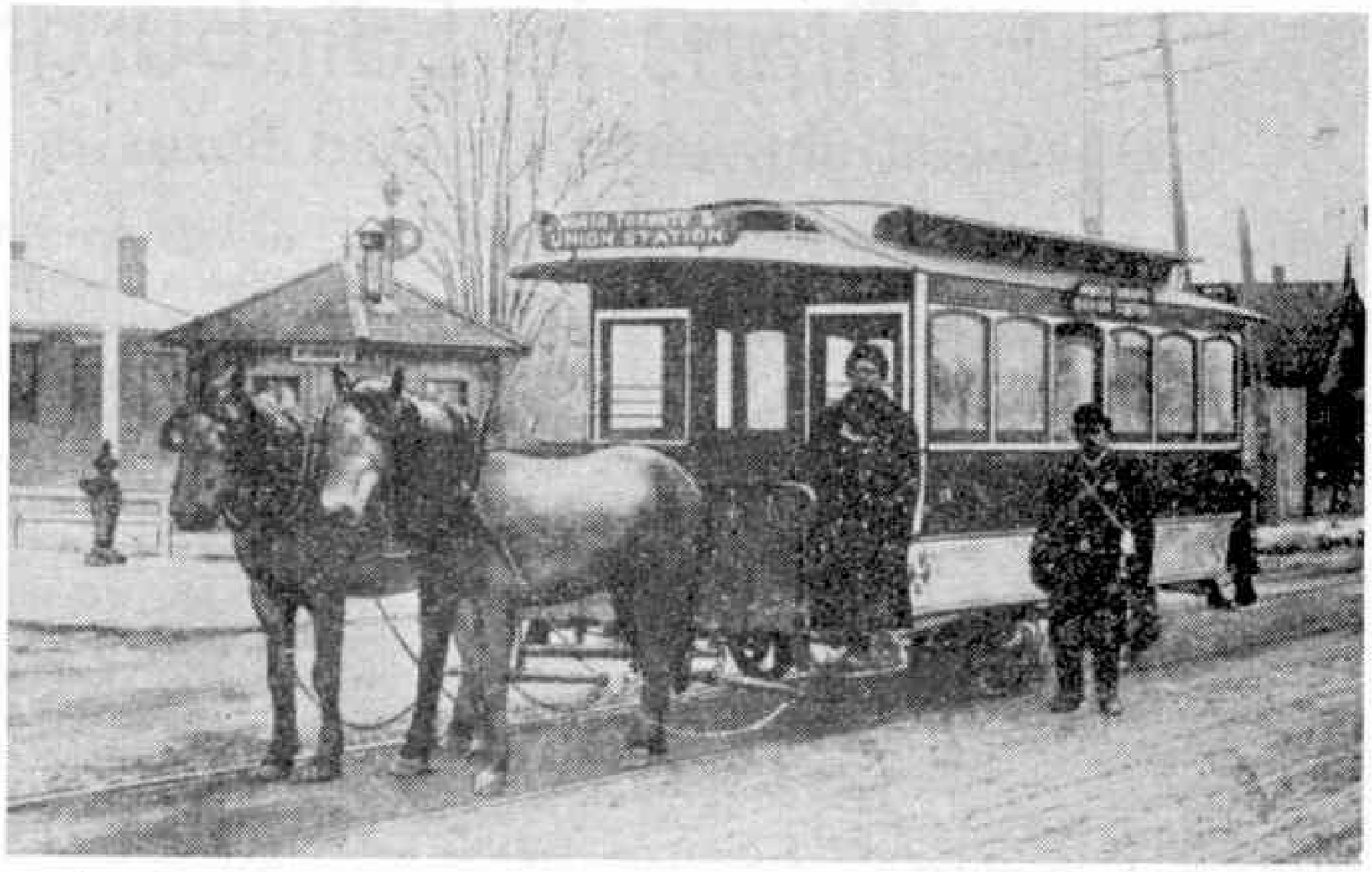
Good News for 1955

Here we are at the beginning of another New Year, and I hope that it will be one that will be enjoyable and prosperous for all of you. However many Firsts of January we may have passed by, we have always looked for real progress in the ensuing twelve months, and I hope that we shall all be satisfied in this respect during 1955.

This of course applies to our wishes in regard to the *M.M.* Great strides have been made in the last two or three years, but there is always room for further improvement! So I am continually on the lookout for opportunities of making the Magazine more valuable and more attractive to all of you, and now I can tell you that I have planned another step forward for 1955. This will take the form of a permanent increase in the number of pages in each issue.

I must hasten to explain that I am not merely enlarging the Magazine. Often in the past few months, when looking at the current issue of the *M.M.*, it has seemed to me that I have not been meeting the wishes of younger readers as fully as I should like. By younger readers I mean those up to 10 or perhaps 12 years of age, who are perhaps just starting model-building or Hornby Train operation, and it is with their requirements in mind that I am adding the extra pages, which will form the middle section of the Magazine.

This addition will not be just "something for the little ones." Its contents will be simple, but they will just be as realistic as those of the rest of the Magazine, which of course will not be disturbed. Nor does the change mean that there will be nothing in the usual sections of the Magazine for younger readers, or that older readers can ignore the new section. In fact, I feel certain that every reader will gain much without losing anything.



A glimpse of the past. Here is one of the horse-drawn cars used in Toronto in earlier days. The picture provides a striking contrast with the system described and illustrated in the M.M. for October last. It is reproduced by courtesy of Crompton Parkinson Ltd., who supplied the motors, motor generator sets and batteries of the cars used on the Toronto subway, and of the Toronto Transportation Commission.

The Editor

Titans in Edinburgh

New Lightweight Leyland Buses in Service

FEW readers will need to be told that our cover this month shows a scene in Princes Street, Edinburgh. The splendid Scott Monument alone is sufficient to identify it, and on the left of this memorial there are the Princes Street Gardens, with the Castle towering above them, the latter known to all who have visited the City, and to countless others familiar with pictures of it.

Right in the foreground of the cover scene is a bus that enthusiasts will recognise at once as a lightweight Leyland Titan. Like so many other cities and popular centres of Great Britain, Edinburgh is discarding its tramways, and replacing them entirely by buses. To the tramcar enthusiasts this no doubt will be a great disappointment. The minds of some of them will go back to the days when Edinburgh tramcars were almost unique in Great Britain in that they were hauled by underground cables. What was called a plough passed downward from the tramcars, through a slot between the rails, to grip the cables. At junctions it was necessary to open the plough, and it was almost exciting to see the driver twirling the control wheel furiously to let it clear the cable, and turning it equally furiously in the opposite direction to seize the travelling cable on the new track.

In the picture at the head of the page a Leyland Titan bus of the City of Edinburgh Transport Department passes a tramcar running along Princes Street. The illustrations to this article are reproduced by courtesy of W. M. Little, B.Sc., M.Inst.T., Manager, City of Edinburgh Transport Department.

The long cables through the streets were driven from power stations by reciprocating steam engines of a type once very familiar to Meccano enthusiasts. It is now many years since the old cable cars disappeared, and their places were taken by the more familiar electric tramcars, with overhead wires carried on standards. But a short length of the centre slot rail can still be seen in Waterloo Place near the G.P.O., where it has been preserved as a relic of the old system!

Tramcars still run in Edinburgh, and the cover shows the overhead wires on their standards, with tramcars travelling along in the distance. These in turn are now doomed. One by one the various routes are being converted to bus operation, and in preparation for one of these conversions on 12th July of last year four new lightweight Leyland Titans began operating over the route concerned, which passes through Princes Street and on to the Corstorphine area,

west of the city. The City of Edinburgh Transport Department had then ordered 100 of these buses, and it was the first 40 of these that were to be used on the Corstorphine routes. Since that time a further 100 lightweight Titans have been ordered, with bodies supplied by the Metropolitan-Cammell Carriage and Wagon Company Limited.

The four buses were placed on the Corstorphine routes before the actual conversion chiefly to check the fuel consumption figures against estimates. Leyland buses already in service included the P.D. 2/12 Titan, a double deck bus weighing 7 tons 15 cwt., the fuel consumption of which worked out at 8½ miles per gallon. The lightweight Titan had the same Leyland engine, a diesel 125 h.p. unit of 9.8 litres capacity, but its unladen weight was only 6 tons 12 cwt. It was therefore expected that fuel consumption would be better than 10 miles per gallon, and this proved to be the case, the actual figure being about 10½ m.p.g.

These tests, and subsequent experience when the buses replaced the tramcars, showed the value of light weight. There had been some doubt whether with such a bus a power unit as large as the 125 h.p. Leyland diesel engine was really necessary. By comparison with the fuel consumption of an experimental lightweight double deck bus equipped with a lighter engine, it was shown that the difference in the consumption of fuel was not very great; and the use of the more powerful engine proved an economy, because the buses fitted with it could run on top gear long after the low powered bus had to change. The extra power also allowed increased average speeds, and a progressive increase followed on routes from which tramcars disappeared and the central island sites where their passengers were picked up or set down were removed.

An Edinburgh Leyland Titan in Princes Street.

One of Edinburgh's tramcars, now giving way to buses, as has already happened in so many centres.

It will be seen from the pictures of the Titans in Edinburgh that the chassis has been designed for use with a double decked body, having a driver's compartment of the half-cab type, combined with a full width compartment for the engine. The six-cylinder diesel engine runs on direct injection of fuel. Its cylinders have a stroke of 4.8 in. and a bore of 5.5 in., and it develops 125 b.h.p. at 1,800 revolutions a minute. A single dry plate type clutch is fitted, and the gear box is of synchromesh type, with four forward gears and one reverse.

Brakes of course are of the

(Continued on page 6)

A detached church tower, at Wykeham, near Scarborough, that also serves as a lychgate.

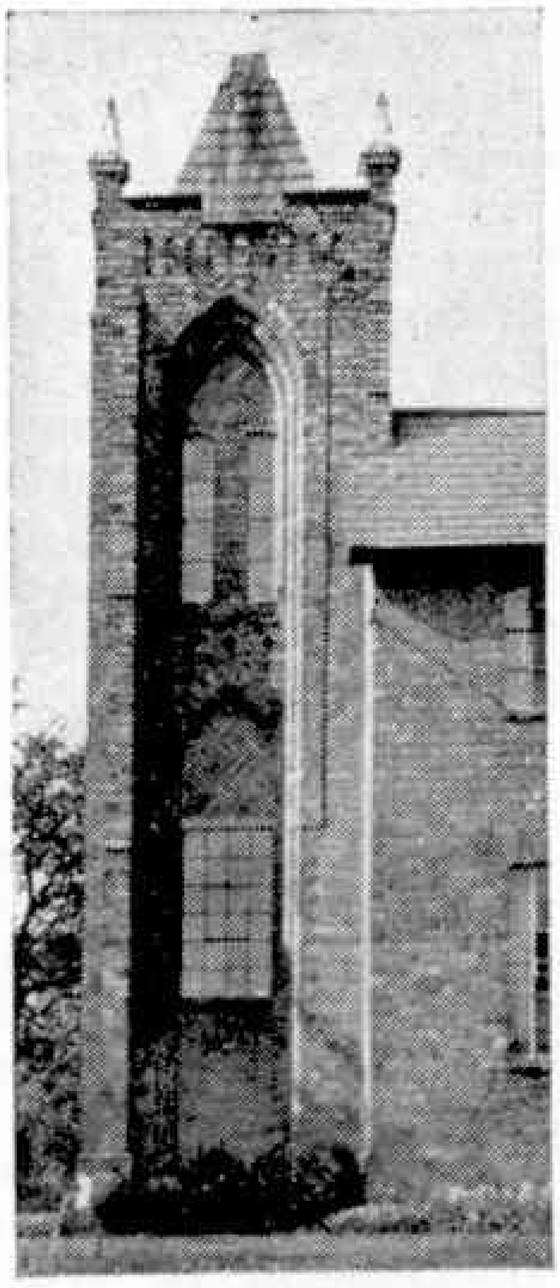
Storied Towers

By Arthur Nettleton

THE English countryside is well provided with romantic towers —church towers of various types, memorial towers, towers with legends, and towers with strange histories. Indeed one cannot travel far in it without encountering oddities of this kind, and though it is not always easy to unearth their stories, diligent enquiry will often reveal interesting stories connected with these structures.

By far the greatest number of towers are those on churches, but not all such erections are really what they seem to be. At Barsby, between Leicester and Oakham, for instance, stands a sham structure of this type, built about fifty years ago. It has lancet windows and was surmounted by a small steeple until a gale razed this spire. Yet the adjoining building is not a church at all, but an ordinary cottage!

The tower was built in an attempt to get a burial ground for Barsby, the villagers having been told that only places with a church were entitled to this amenity. In the hope that the authorities would be hoodwinked, the cottage just described was given a tower to convert it into a "church". But the subterfuge failed, and to-day Barsby is still without a burial ground of its own. The mock church-cum-cottage remains as a monument to a ruse that did not come off.

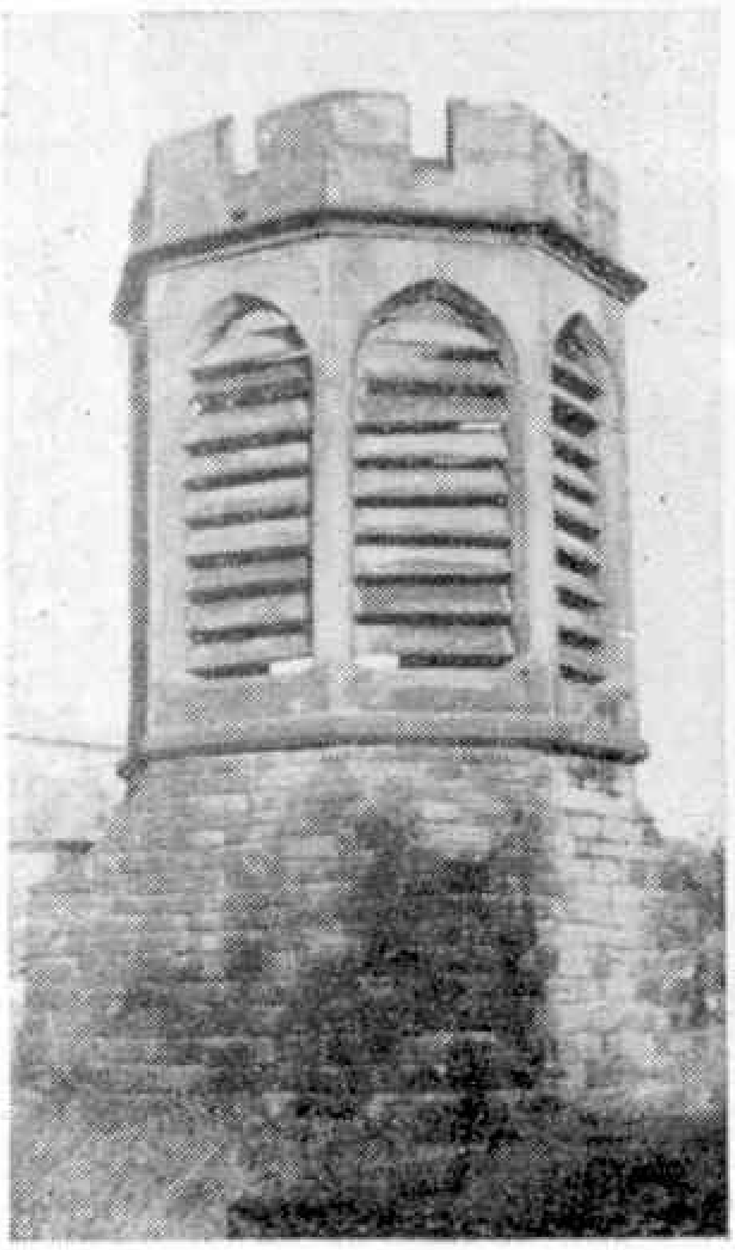


A "church tower" at, Barsby, between Leicester and Oakham, that is a sham structure, built to deceive.

Our real church towers, however, can sometimes be classed as curiosities. One of the strangest is to be seen at Wykeham, near Scarborough, for in addition to being completely separate from the rest of the church, it serves as a lychgate.

The explanation is that the church here was originally built without a tower. Later, when funds were raised to add one, the villagers were dismayed to learn that the building was too weak to support one. Not to be outdone, they erected a detached tower astride the churchyard wall, making this also the gateway, so that anyone going to Wykeham Church today has to pass right through the lower part of the tower.

Equally entertaining are some of the other odd uses to which certain church towers have been put. That famous landmark of the Lincolnshire Fens, Boston "Stump", is not only an imposing addition to St. Botolph's Church,



This lantern is from the top of the tower of the Old Bell Chapel, Thornton, near Bradford.

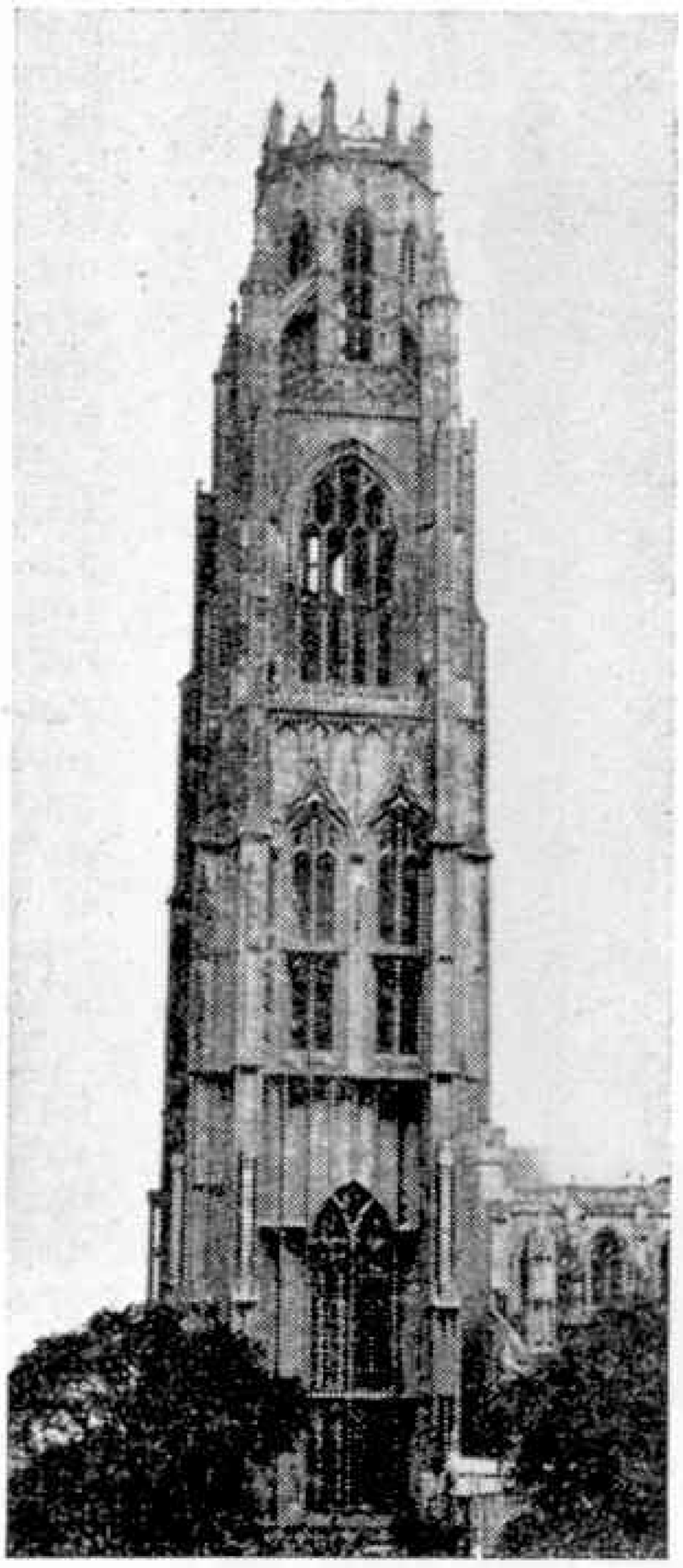
but a lighthouse as well.

Plainly visible to shipping traversing the Wash, it long ago carried a flare at night, and in more recent times it has been equipped with a powerful electric beacon, enabling it to continue its service for mariners. It is not a very tall structure, its 280 ft. being exceeded by several others, but it is visible for miles across the flat landscape and can be seen from well out at sea.

Even more remarkable was the use of church towers for acrobatics in bygone days. Tight-ropes were stretched from them, and intrepid performers gave thrilling displays on these. Durham Cathedral was the scene of such an entertainment as far back as the year 1237, and the custom continued at intervals up and down Britain up to less than 150 years ago.

Village churches were sometimes the scene of such daring deeds, and Kegworth, Leicestershire, has memories of an occasion when a steeplejack seated himself on the church weathervane and played a tune on a flute. This was his way of celebrating the successful completion of repairs to the spire.

Nearby Nottinghamshire has a little-known story concerning the tower of Gotham Church. It happened in 1607, when a new rector was appointed by the Earl of Shrewsbury. The lord of the manor wanted a different clergyman to have the post and he got his own way eventually, by

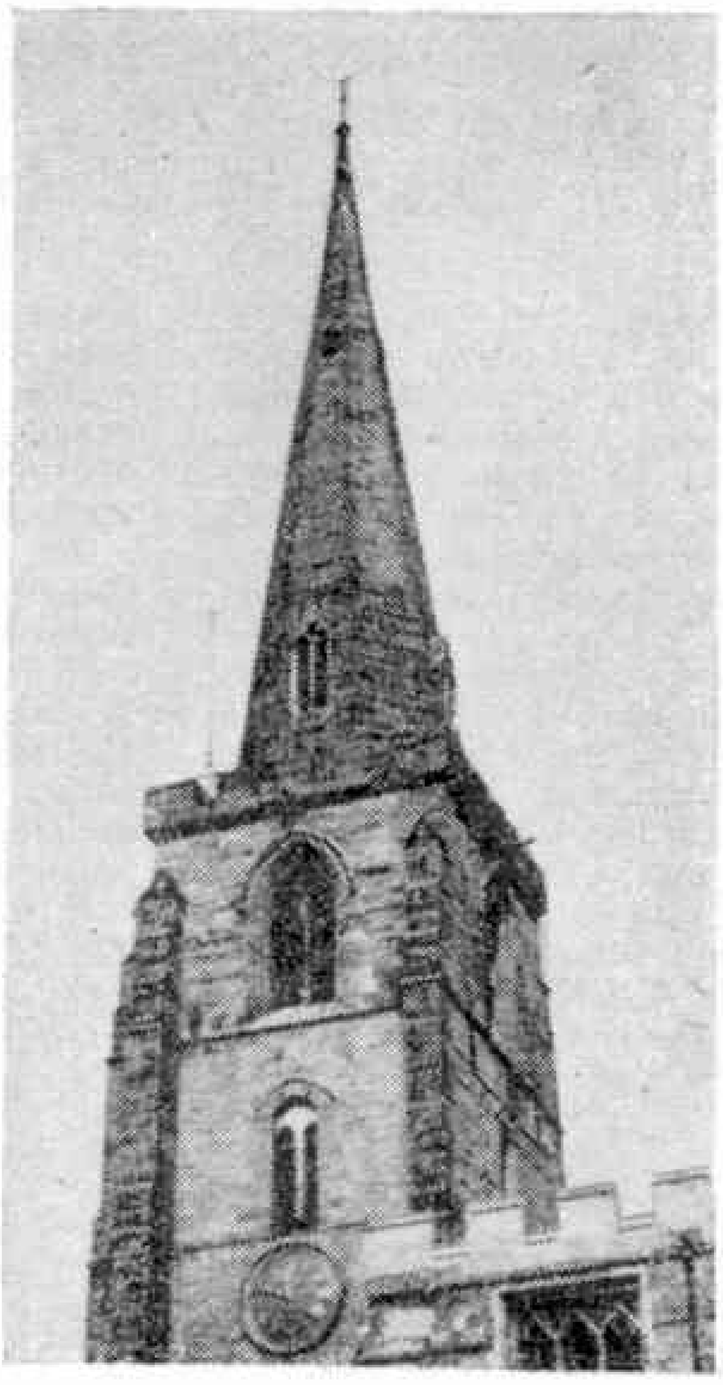


Boston Stump, the 280 ft. tower of the Parish Church of St. Botolph, is a notable Lincolnshire landmark.

posting a lookout man in the church tower, instructing him that when the rector nominated by the Earl approached, the church bells were to be rung. As soon as the peals were heard, the villagers barred the road to the church. After this had happened several times the thwarted rector gave up his attempts to reach the village, thus leaving the vacancy open for the rector nominated by the lord of the manor.

In a number of cases a crumbling church has had part of its tower specially preserved, and one relic of this sort is of exceptional interest, being a souvenir from the chapel at Thornton, near Bradford, where the father of the Brontë Sisters ministered early last century.

The structure is actually the "lantern" of the tower which surmounted the Old Bell Chapel, and it is one of the few surviving remnants of that noble sanctuary, most of the building having been demolished when the present Thornton Church was built.



A steeplejack once sat astride the weather vane of this church tower, at Kegworth, Leicestershire, and played a tune on a flute.

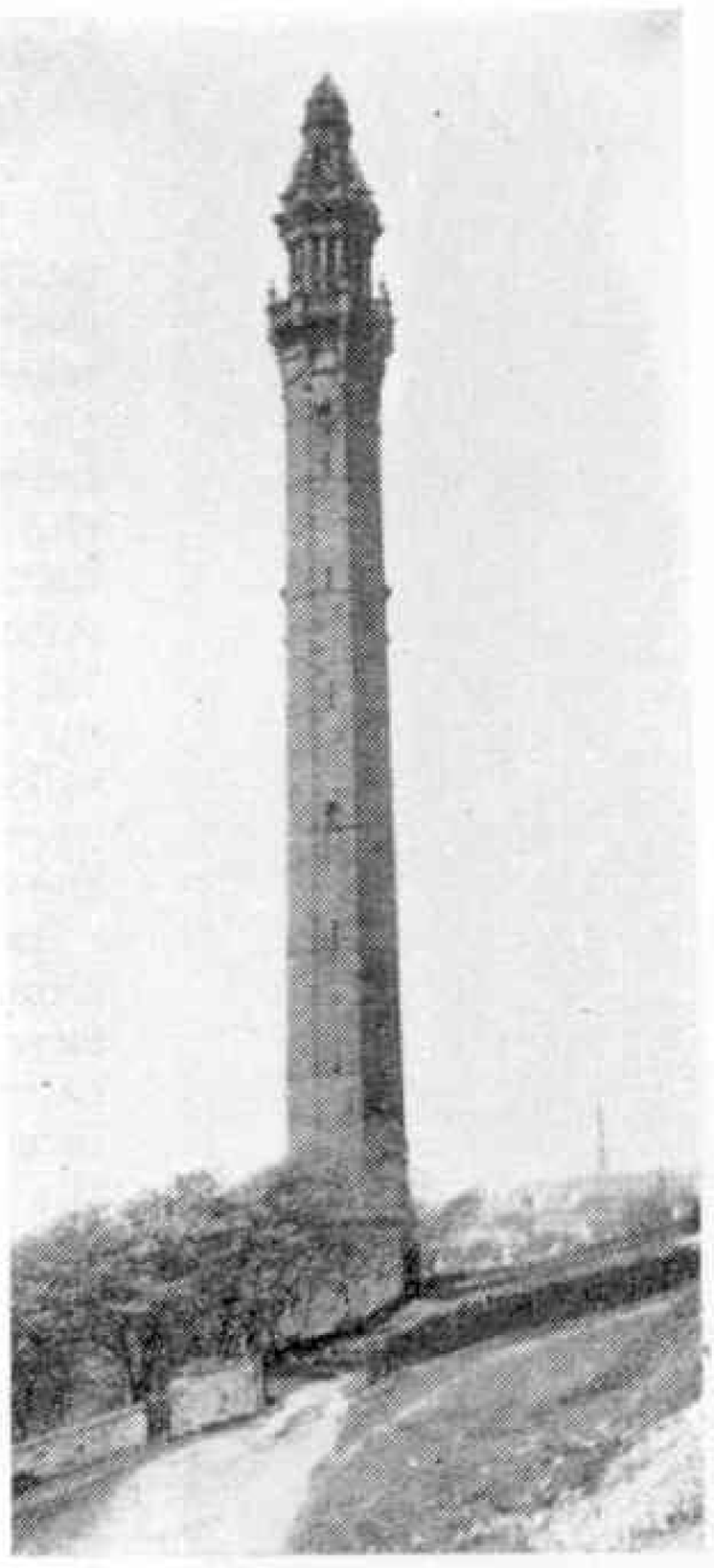
Harrogate possesses a tower that often puzzles visitors, for it resembles an abbreviated chimney and its purpose is not readily apparent. It stands on an elevated site near Harlow Moor, and is really an observatory from which an astonishingly wide area of the surrounding countryside can be seen. Standing 90 ft. high and 600 ft. above sea level, it is said to command a view embracing no fewer than 23 market towns, 17 castles, seven

great battlefields, and nearly 200 churches!

Memorial towers abound in most parts of our countryside but Windermere has a unique clock tower, although its singularity is not immediately evident. It is the only one in Britain that is a memorial to the writer of a guide-book. He was M. J. B. Baddeley, who wrote one of the most detailed guides to Lakeland.

Remarkable, too, in its own class, is the 151-foot memorial carillon tower at Loughborough, erected in 1923 as a monument to those local men who lost their lives while fighting for their country in the first World War. It contains a peal of 47 bells, and their peculiarity is that medals were thrown into the molten metal when the bells were cast.

Among other strange memorial towers may be pointed out a bizarre example at Finedon, Northamptonshire. Actually it is part of a farmstead. It consists of a huge circular structure, ornately decorated, and has a church-like annexe. The tower was built by a local squire who made a hobby of erecting monstrous structures of this kind, and is the one he regarded as his masterpiece, for it was erected in memory of his son who was drowned at sea in 1863.



Wainhouse's Tower, Halifax—but it is only a decorated chimney stack!

Halifax, in the West Riding of Yorkshire, has one of the most amazing towers of all, an erection resembling an Eastern minaret. Just over 250 ft. high, it was built in 1871, and tradition states that its owner planned to use it as a vantage point from which to spy on a neighbour.

The real reason for building this curious tower was to provide a dyeworks with a chimney, and in reality it is an ornate smokestack. The dyeworks have been demolished, but the fancy chimney survives. In fact, it is one of Britain's storied towers now owned by the public, for in 1918 it was purchased by the townsfolk of Halifax, with money raised by public subscription. Sightseers are occasionally allowed to climb the stairs inside the structure.

Titans in Edinburgh

(*Continued from page 3*)

highest importance in bus design, and those of the Titan are actuated by vacuum cylinders, mounted direct on the stub axles, for the front brakes, and by rod hook with vacuum servo assistance to the rear brakes. The foot brake operates on all four wheels, and the hand brake, of the pull-on type, operates by direct mechanical linkage on the brakes of the rear wheels only. Automatic shoe adjusters are fitted.

An appreciable reduction in chassis weight has been brought about by changes in the standard Titan that were called for by the specification of the Edinburgh Transport Department. These included the fitting of lighter springs, some minor alterations to the chassis frame and rear extension, and the use of a fuel tank with a capacity of 28 gallons instead of the standard one, the capacity of which is 35 gallons. Further reductions were made possible by the adoption of Nife 24-volt batteries. As a result the chassis weighs 4 tons 7 cwt. 1 qr., the specification including at that weight Clayton R.P. Automatic lubrication equipment.

The bodywork, which is of M.C.W. special lightweight steel construction, weighs 2 tons 5 cwt. All grip rails, stairs, etc., are of tubular stainless steel. Dapta seating with hide upholstery provides comfortable accommodation for passengers, for whom there is seating for 27 in the lower saloon and 33 upstairs. The second 100 buses will seat 63 passengers. A safety point is that the use of a lighter body gives a lower centre of gravity, so that the angle at which a bus will topple over when tilted sideways is increased. This means that an increased weight can be carried on the upper deck.

An interesting fact that emerged from the fuel consumption tests already referred to was that the number of passengers seems to have no effect on the rate at which fuel is used. The probable reason for this is that bus services run long mileages with light loads, the smaller number of passengers in outlying areas more than compensating for the crowding in city centres and at rush hours, a fact that does not seem to be well known to bus enthusiasts.

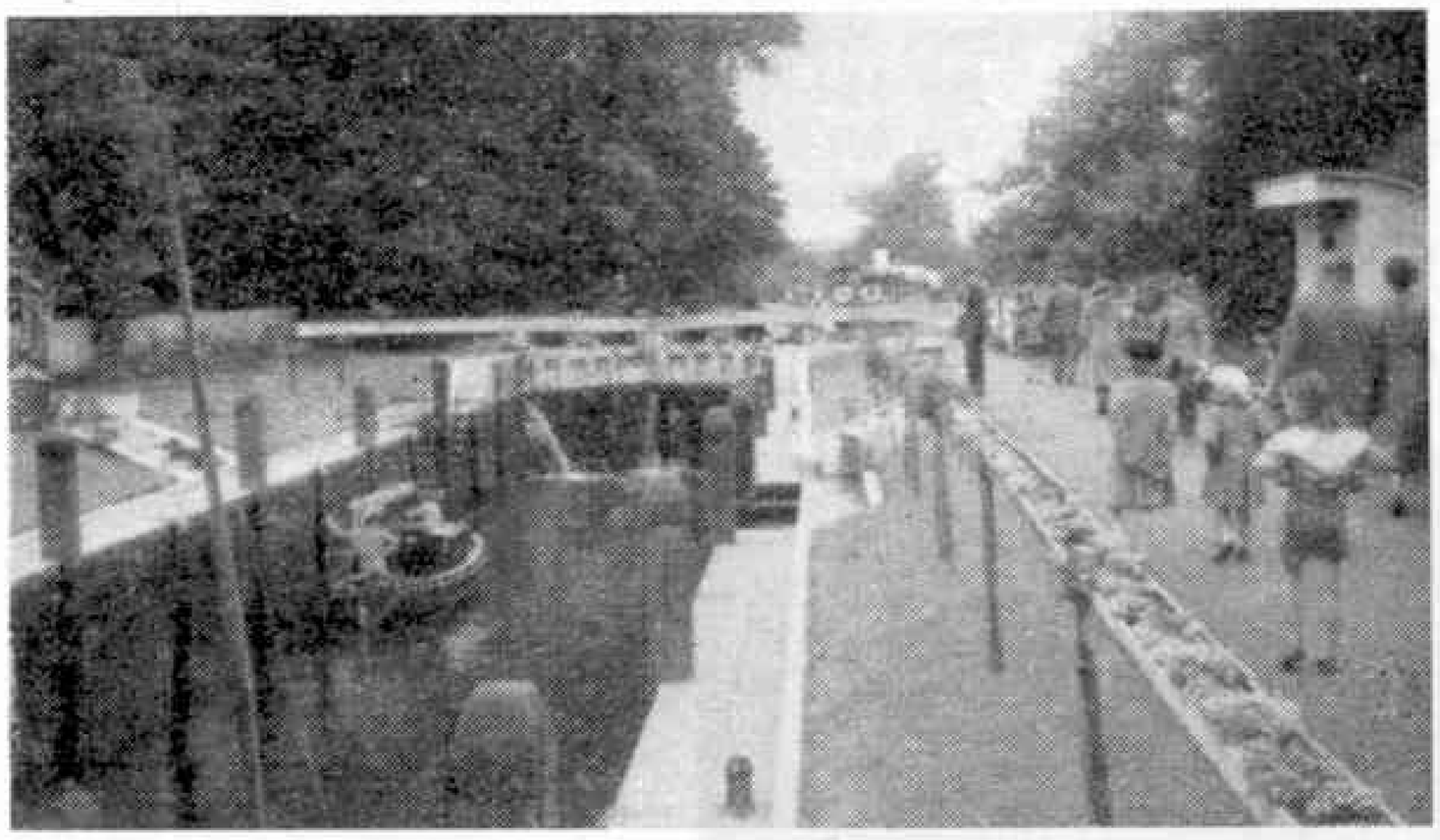
A final look back on the Edinburgh tramcar system provides an interesting comparison with the newer bus service soon to become universal in the City's Transport area.

The older type of Edinburgh tramcar had 54 seats, and the larger ones, the last to be taken out of service, 62, but this seating is of a lower standard than that of the buses. As the number of tramcar routes was reduced the average operating speed of the tramcars themselves rose to 9.3 m.p.h., still a mile an hour below the bus average already achieved last year, which now has been increased.

Riverside Reflections

By Roland Fry

THE peaceful and restful movement of the Thames, and the gentle rocking of boats in the wash of little steamers, is a welcome contrast to the roaring London buses. But mechanically-minded boys and girls of all ages up to the bath-chair stage can peep into the fascinating engine-rooms of the steamers, with their flashing connecting rods and the hiss and clatter of steam and moving parts. A few steps from the engine-room hatch will restore the true sounds of the river—the lap of wavelets against bank and landing-stage, the scraping rustle of the reeds and the gentle hiss of a million bursting bubbles where a little propeller tries to produce the wash of an ocean liner.



Shepperton Lock.

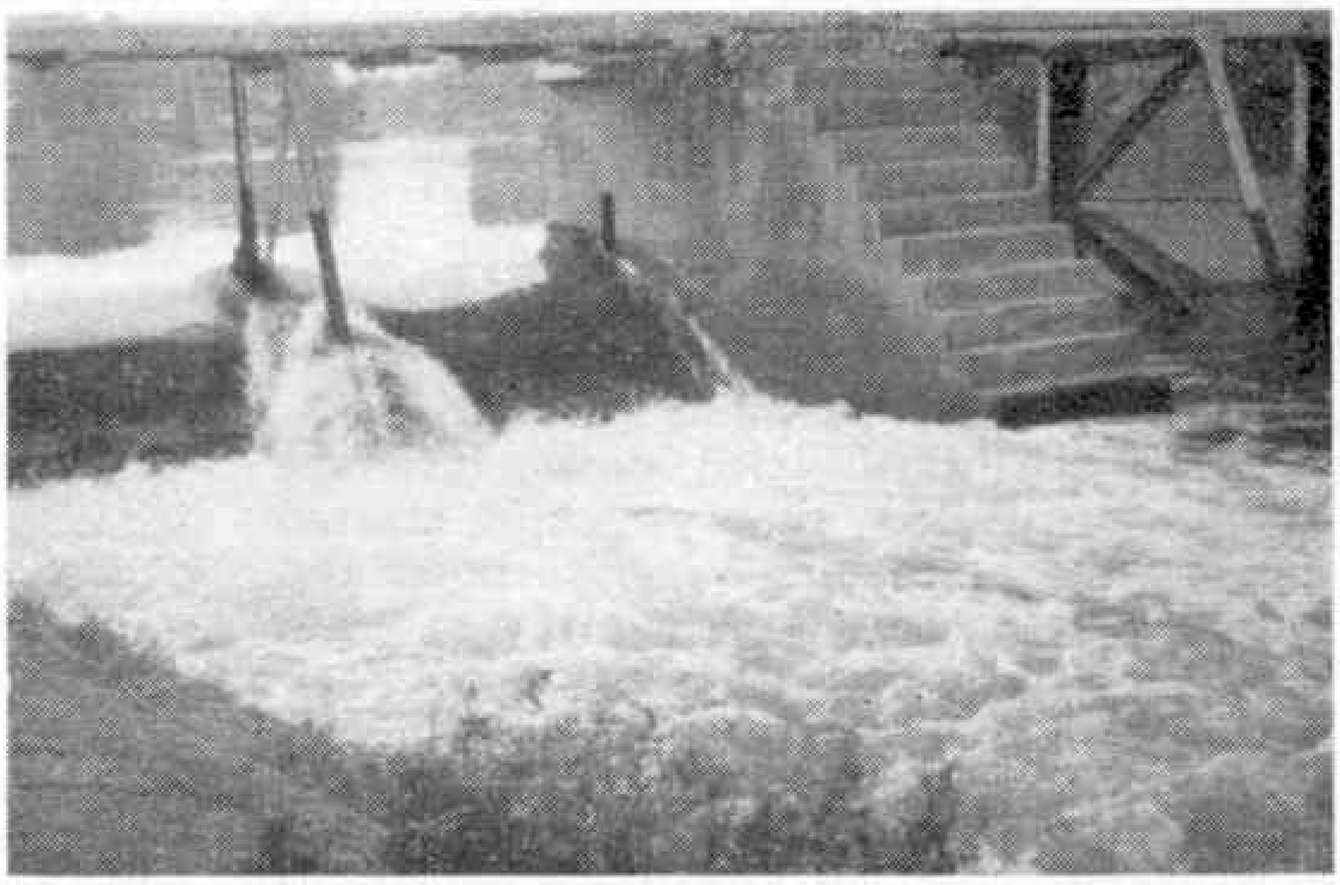
The riverside homes glide slowly past, in their setting of trees, a soft green of many different shades, which however are all alike in their cool, moist, freshness; it is easy to imagine these homes on the banks of a tropical river, far away from anywhere, and then we remember with relief the absence of insects and think, clearly for once perhaps, of a climate that may cause endless grumbles, but rarely kills.

The water around us itself repays study. Glassy and limpid it lies by the banks, reflecting every leaf and twig in crystal clearness, but when the wind catches it the surface is ruffled into tiny scales that seem to imprison a mackerel sky. The weirs tear that gentle surface to shreds. But before they are tossed and torn into a foaming chaos the waters calm themselves into a glassy oiliness, and then the river-gods seem to scarify them with giant rakes, and hurl them in long shredded strands into the cauldron below.

In the locks too the waters foam and swirl as they yield to the bidding of Man; launches and boats rise and fall between those trimly sloping banks, ablaze with flowers, and each garden seems to be lovelier than the last. And in that setting the river seems to breathe as its waters rise and fall.

Swans and ducks, with an odd mixture of dignity and last-minute scramble, dodge the river steamer. We who walk the decks feel that our craft is small enough for us to be close to the water and to see it intimately, to be of it rather than on it; but our good ship is large enough to provide a saloon where we may have meals in movement, perhaps the most exciting kind of all, especially when we are young.

We voyage happily without leaving home, and we carry back to the bricks and mortar of London memories of a scene ever-changing, but always the same.



Penton Hook Weir.

Featherweight Fighter

By John W. R. Taylor

VERY early on the morning of 11th August, 1954, a lorry left the Folland Aircraft Factory at Hamble, near Southampton, carrying a tiny aeroplane, complete except for its wingtips. At 11.30 a.m., it drove through the gates of the Ministry of Supply's secret Aeroplane and Armament Experimental Establishment at Boscombe Down in Wiltshire, where mechanics at once started unloading the aircraft and preparing it for take-off.

The first flight of a new prototype is always a nerve-racking affair. This time there was an even greater air of tense excitement than usual, because the aircraft was the revolutionary Folland Midge, one of the smallest fighter 'planes ever built, with a wing span of only 20 ft. 8 in. and weight of about 4,500 lb.

By four o'clock all pre-flight tests, including engine running, had been completed. The fuel tanks were partly filled, Folland's test pilot, Sq. Ldr. E. A. Tennant, D.F.C., settled down into the Midge's surprisingly roomy cockpit, started its Armstrong Siddeley Viper turbojet and trundled over to the long runway to begin taxying tests.

He did one short hop. Then, to everyone's amazement, instead of making another hop to get the feel of the aircraft's controls, he took off and did a circuit of the airfield, before landing to refuel.

Within minutes the Midge was flying again, and not just "flying," because it was so obviously perfect that Sq. Ldr. Tennant climbed through the clouds, rolled the aircraft seven times in quick succession and then dived down to perform a beautiful slow roll right over the airfield, where everybody could see it.

By the end of August the Midge had flown for 16 hours—an incredible total for a new prototype—and had made more than 30 take-offs and landings. On no occasion was take-off delayed even a minute by unserviceability; and the most severe tests failed to uncover any fault in the design, construction or equipment. Less than a month after its first flight, it was at Farnborough, thrilling vast crowds at the S.B.A.C. Display. Yet the Midge will never be more than a prototype and, indeed, exists only because Bristols had to drop development of a little turbojet named the Saturn, when the pilotless bomber which it was designed to power was abandoned.

The Folland Midge lightweight fighter being conveyed by road to the Government's Aeroplane and Armament Experimental Establishment at Boscombe Down, for its first flight.

Its story dates from 1952, when designers all over the world were becoming more and more alarmed at the ever-increasing size, weight and cost of fighter aircraft. The Sopwith Pup of 1916 had weighed only 1,225 lb. and cost £1,380. The Hurricane Mk. 1 of 1939 weighed 6,600 lb. and cost £5,000. Modern single-seaters like the American F-100 Super Sabre often weigh more than a fully-loaded Dakota air liner and cost anything up to a quarter of a million pounds each.

Folland's Managing Director and Chief Designer, Mr. W. E. W. Petter, who had already earned a great reputation by designing the Canberra bomber for English

Electric, felt certain that it was possible to build a fighter with the performance of a Hunter or Swift, but at a fraction of their cost and much smaller in size and weight. So he began design studies for a lightweight fighter which he named the Gnat.

His project was made feasible by the Saturn, which promised to combine high power with very light weight. So, although the Air Ministry showed little interest, Follands decided in 1952 to build the Gnat as a private venture.

From the start, they insisted that light weight was not to be achieved at the expense of efficiency, safety or fighting ability. But some of the equipment in a conventional fighter is there only because the aircraft is big and heavy. This they deleted. Other equipment was re-designed to save weight and space.

Instead of the usual speed-brakes, which are essential in a modern fighter to prevent its overshooting its enemy after a high speed attack from astern, the Gnat's undercarriage and wheel fairing doors were designed so that they could be lowered partially in flight to reduce the aircraft's speed. A lightweight ejector seat was fitted. And every pound saved led to a reduction of about 10 lb. in all-up weight, because the aircraft's structure did not need to be made so heavy, and less fuel was therefore required to lift it off the ground and keep it flying.

Finally, tests showed that an armament of two of the new 30 mm. rapid-fire cannon, instead of the usual four, would be quite sufficient to enable the fighter to destroy any aircraft it was likely to be matched against in combat.

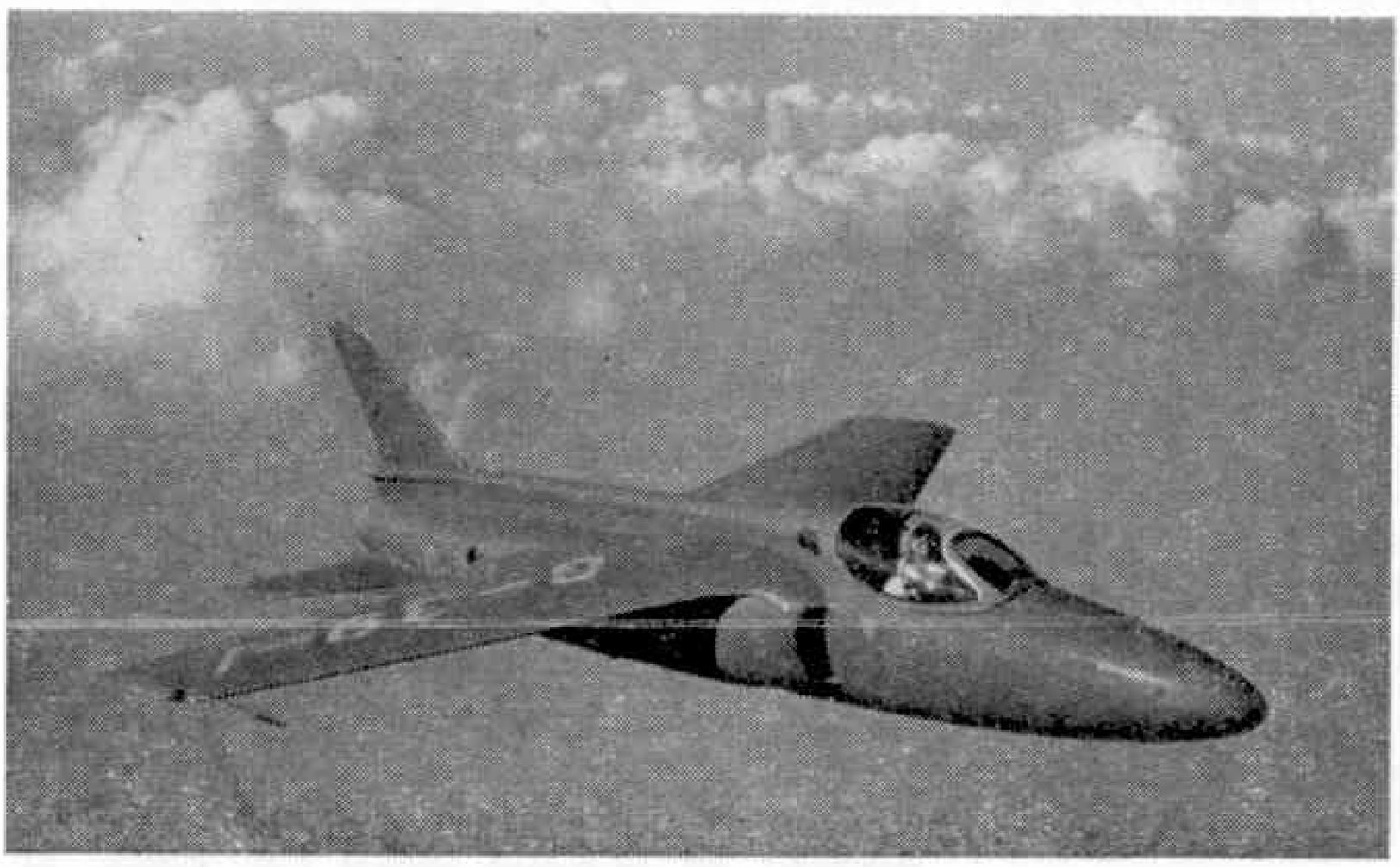
Then came the bombshell, when the Saturn was abandoned, Follands looked around for an alternative engine; but the only possibility was the Viper, which developed 1,640 lb. thrust—about one third of the power needed for the Gnat. Undismayed, Mr. Petter decided to fit a Viper in the prototype. To distinguish it from the Gnat, it was named the Midge. The rest of its story has already been told.

In 1953, however, Bristols started work on a new engine named the Orpheus which, although lightweight, is intended to produce 4,850 lb. thrust. So Folland at once began adapting the Gnat to accommodate the new engine, and started work on a prototype, which is due to fly this year.

It should be worth waiting for because, with only a third of the power of the Orpheus, the Midge can fly at over 600 m.p.h. So there seems little doubt that the Gnat will fly faster than

(*Continued on page 48*)

Squadron Leader E. A. Tennant, D.F.C., Chief Test Pilot of Folland Aircraft Ltd., climbing into the cockpit of the Midge.



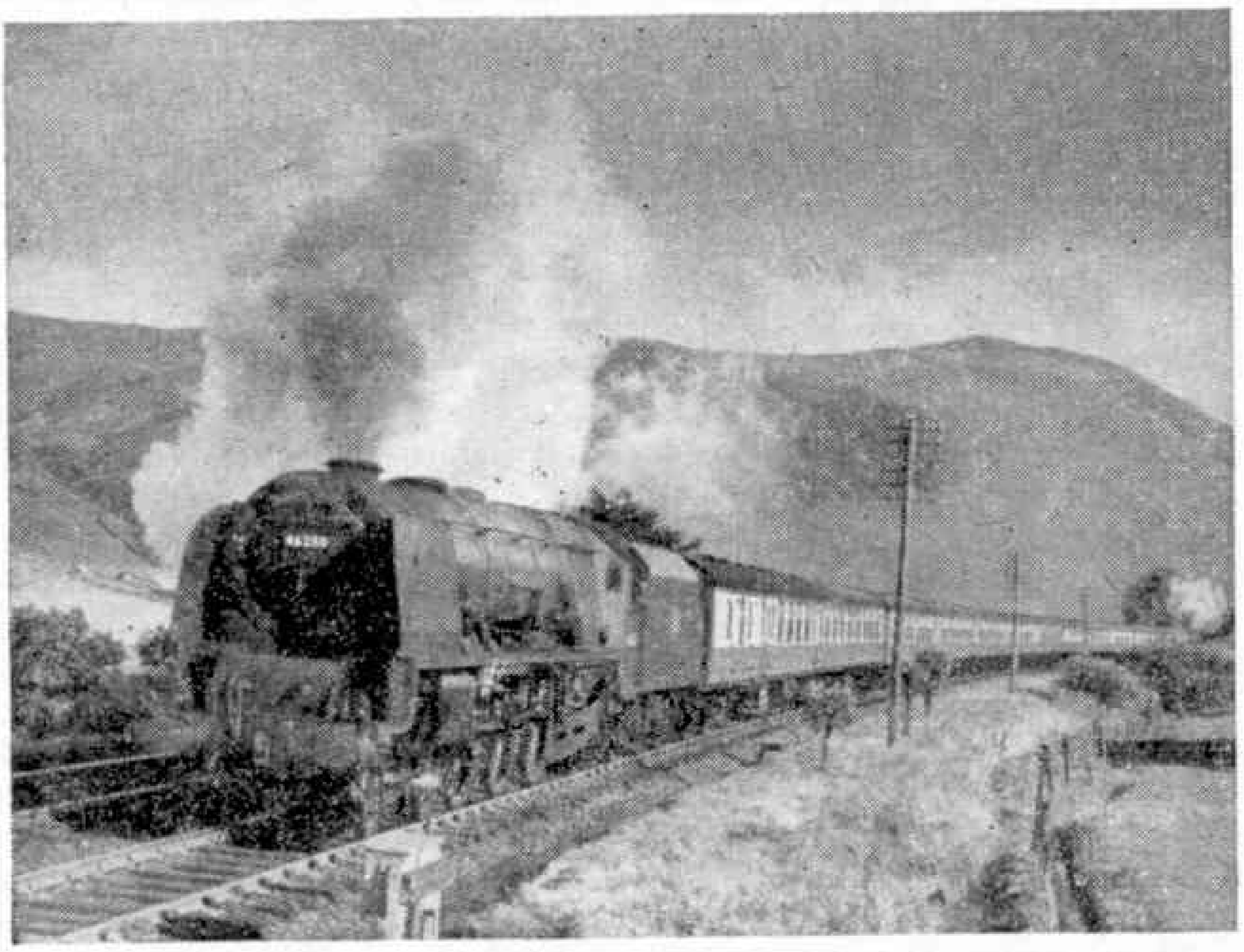
A fine view of the Folland Midge in the air.

Beattock Bank

A Fascinating Scottish Railway Incline

By G. H. Robin

SURELY the word "Beattock" is one of the most romantic names in Scottish railway lore? I still remember the feeling of awesome curiosity with which when a schoolboy I used to watch the magnificent "White" trains leaving Glasgow (Central) for the South, hauled by handsome Caledonian engines in their spotless blue livery. I knew that somewhere before reaching the border these trains surmounted the famous Beattock Summit and then went all out for Carlisle, attaining fabulous speeds down the other side, it was said. Coming North, all heavy expresses had, it seemed, to stop at Beattock station in all weathers, to be banked by an 0–4–4T up to the summit at a speed somewhat out of keeping with express traditions.

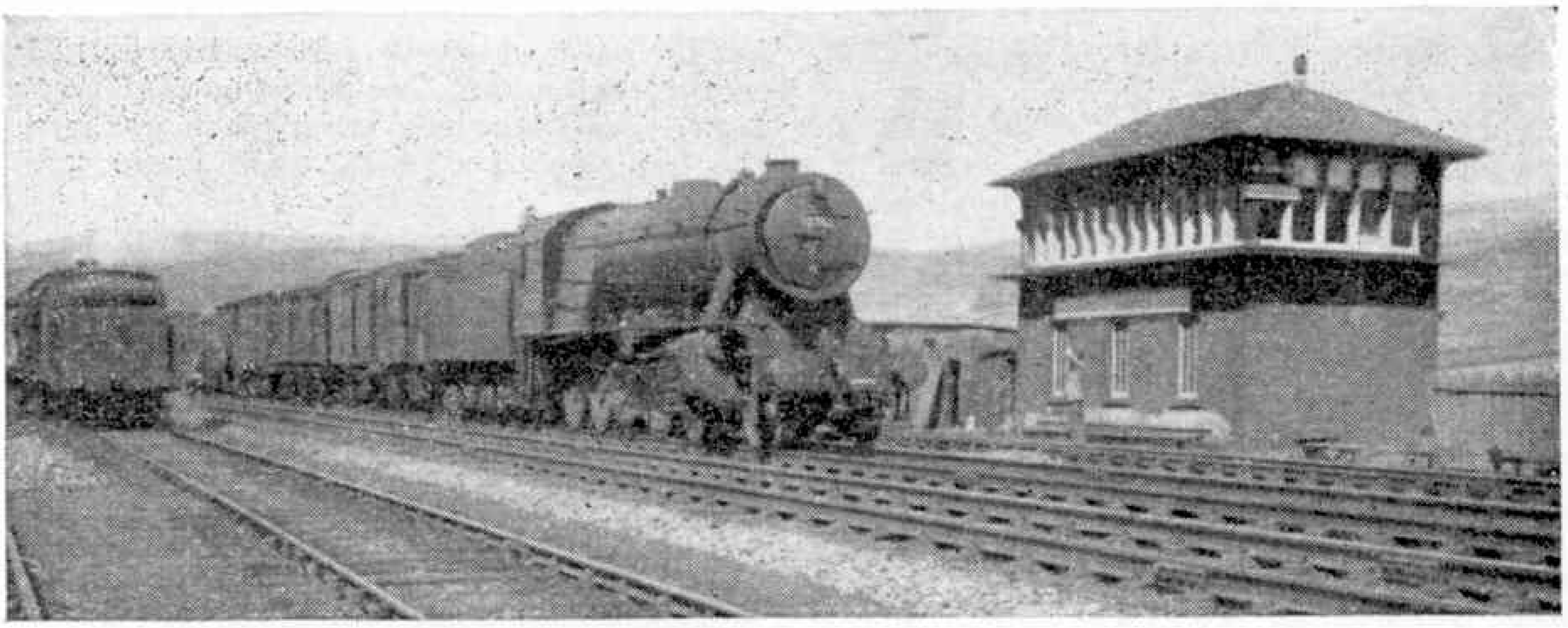


The down Royal Scot at Harthope, on the ascent of Beattock Bank, headed by No. 46250 City of Lichfield. with a banker in the rear. Photograph by Archdeacon E. Treacy.

How then did this long and fearsome bank come to form part of the Caledonian Railway section of the West Coast Royal Mail Route? The old stage coach route had followed the valleys of the Annan and the Evan to its highest point. The grading was reasonable to Beattock, but the last 700 feet rise from there to the summit at a height of 1,015 feet was concentrated into a distance of 10 miles, an average rise of about 1 in 75. Early railway engineers maintained that steam locomotives would not have sufficient adhesion to allow them to climb a hill so steep and so long, and for that reason they turned their attention to the valley of the River Nith, with the idea of reaching Glasgow by way of Dumfries and Kilmarnock.

A railway was eventually built over the rival route up Nithsdale, which became the main line of the Glasgow and South Western Railway. This route was not so steep as that through Beattock, but added about 20 miles to the distance. But to begin with, after much argument, the Annandale and the Clyde Valley scheme won the day, aided by recognition of the fact that from it Edinburgh too could easily be reached by a branch starting at Carstairs, about 23 miles north of Beattock Summit. It was always intended that northbound trains should stop at Beattock station for banking assistance up to the Summit. The approach to the Summit from the north also was difficult, but not so steep, the ruling gradient being 1 in 99 over the final two miles only, against the gruelling 10-mile climb at around 1 in 75 that confronts trains from the south.

Strict maximum loads were laid down which could be taken up to the Summit unassisted. Caley drivers were never officially encouraged to travel fast downhill for the sake of speed itself, and in contrast to the tight uphill timings, downhill ones were usually very easy, and trains were allowed 10 minutes down the Bank, an



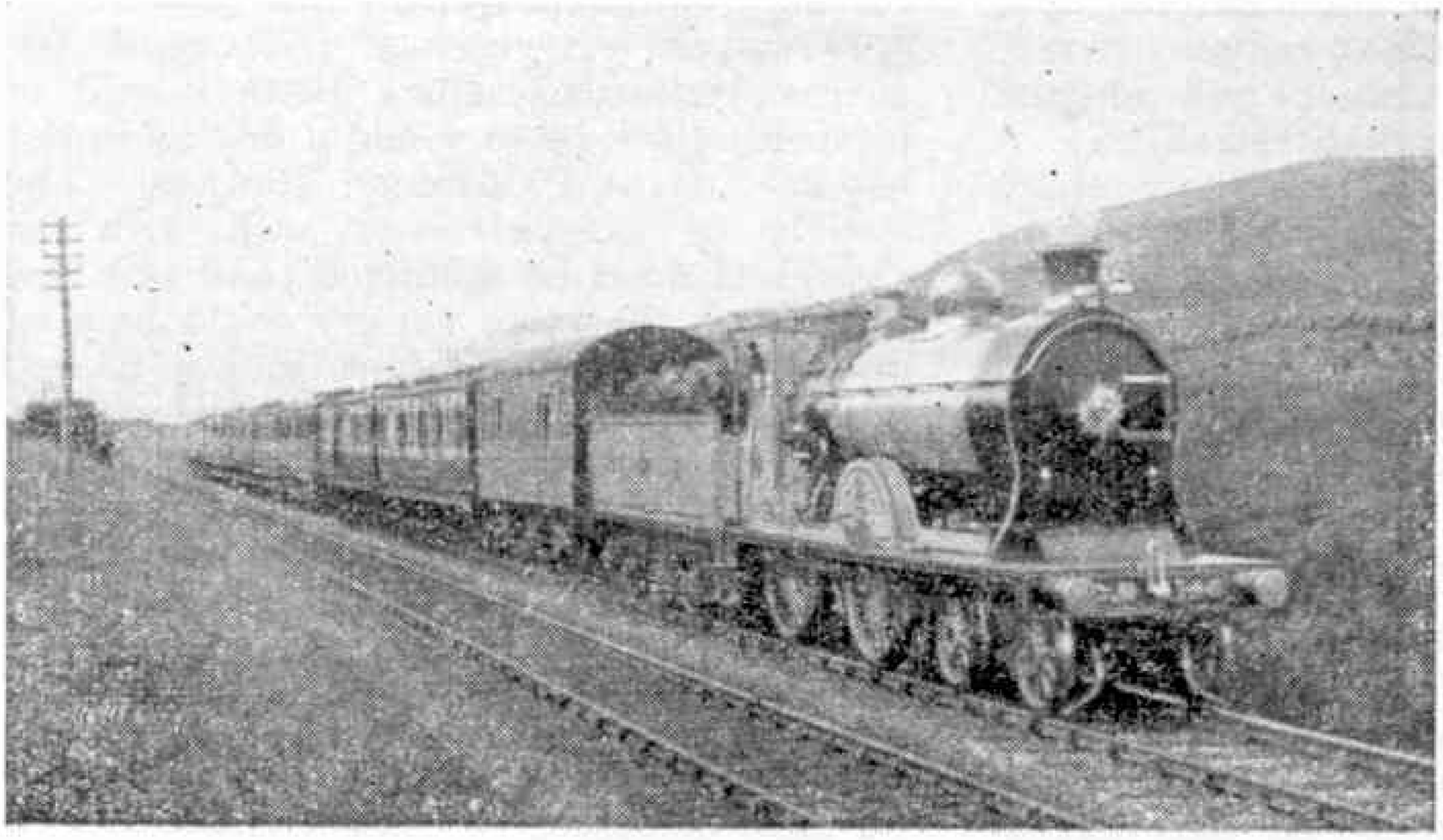
An Austerity 2-10-0 No. 90762 on an up freight train stops at Beattock Summit for water. On the left is the Summit Pilot about to return to Beattock Station. Photograph by G. H. Robin.

average speed of only 60 m.p.h. Speed, however, was often well up in the seventies, while some overall recordings down the Bank must have demanded speeds in the eighties.

The latest bankers of Caledonian days were 0–4–4Ts, fitted with "slip" couplings to enable them to be uncoupled without stopping the trains they were assisting, though some of the "Wemyss Bay" 4–6–2Ts were sent to Beattock when new. Owing to superheater trouble when running downhill without steam, however, these were sent to the Glasgow area.

The formation of the L.M.S.R., of which the Caledonian Railway became part, saw the famous Midland Compound 4–4–0s establish themselves in 1925 on Scottish main lines, hauling single-handed heavier loads than they had done on their parent line. They had the same power rating as the latest Caley 4–4–0s, though they were more economical. The "Royal Scot" 4–6–0s came along soon after. They were designed to take more than 400 tons unassisted, as against about 260 tons allowed for 4–4–0s, but this figure was later reduced to 330 tons, a reduction of about three corridor coaches. It was the advent of the L.M.S. Stanier Pacifics, designed to take trains of 500 tons over both Shap and Beattock Summits in the course of daily through running from London to Glasgow, that practically eliminated banking on the heaviest passenger trains.

The onslaught on the Bank really begins at the crossing of the River Annan $4\frac{1}{4}$ miles South of Beattock station. The grading there is only 1 in 202, and trains rushing the Bank usually lose about 10 m.p.h. between the crossing of the river and passing through the station. During the famous test run of *Princess Elizabeth* on 16th November 1936, when she ran from Euston to Glasgow Central in 5 hours $44\frac{1}{2}$ minutes with 225 tons, this locomotive ran the 10 miles between Beattock station and the Summit in 9 min. 31 sec., and her speed over the final two or three miles was just over 56 m.p.h.

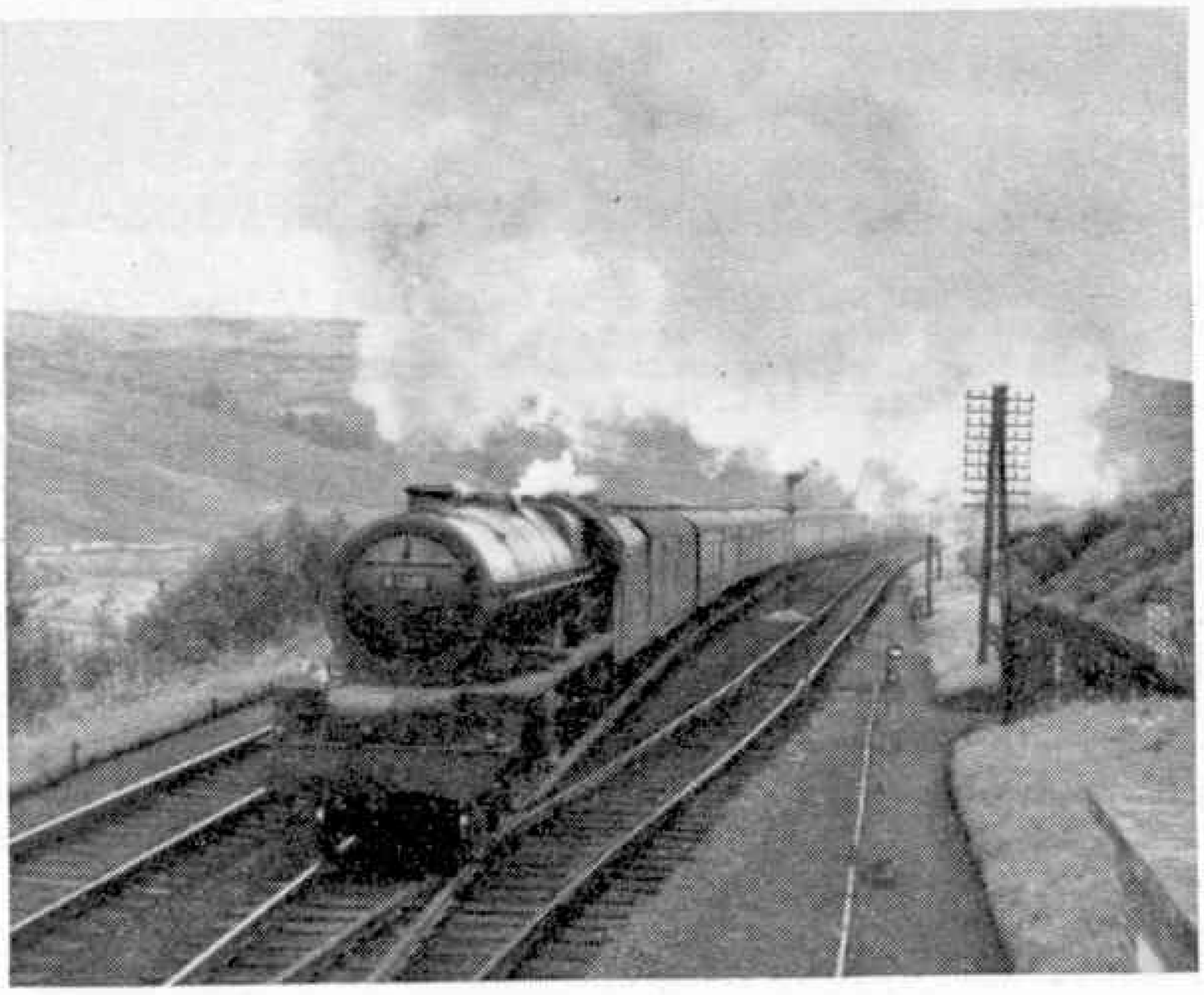


A spotless Dunalastair IV 4-4-0 ascends the Bank in Caledonian days. Photograph by H. Gordon Tidey.

About 30 m.p.h. is a fair average for a heavy express at the top.

Then on 26th February 1939, with a test load of 600 tons, No. 6234 *Duchess of Abercorn*, although scheduled to stop at Beattock for water, took this huge load over both Shap and Beattock in her stride; her time for the ten miles of the Bank was 16 min. 30 sec., and speed fell from 60 m.p.h. passing the station to just under 30 at the top—an amazing performance.

A length of main line of this nature is naturally a big headache to the operating as well as to the motive power department,



A Birmingham-Glasgow train on Beattock Bank, headed by No. 46203 Princess Margaret Rose, at Greskine. Photograph by Archdeacon E. Treacy.

especially when it is realised that at no place between the Border and Glasgow is this main line quadrupled, apart of course from sidings, station loops and alternative routes north of Law Junction.

Up and down sidings are provided at Beattock station and the Summit, while there were three intermediate signal boxes, Auchencastle, Greskine and Harthope. This gives sections of 2.6, 3.1, 2.4 and 1.9 miles, grading approximately 1 in 88, 1 in 74, 1 in 69, and 1 in 74-79 respectively. Greskine was the only one to be provided with siding accommodation, and even this consists of only one track entered by a back shunt. Greskine Box remains today, but the other two were closed on the introduction of colour light signals.

There are steeper banks in the country than Beattock, but it is the longest to average 1 in 75. There are no stations on the bank; Elvanfoot, two miles north of the Summit, is the first after Beattock.

From time to time exceptional loads have been taken up unassisted by various classes of engine and willing crews. It was during the 1939-45 war that banking was most concentrated, when trains of all loadings were scheduled to stop for water and rear end assistance. The poor quality coal was chiefly responsible for this, giving such bad steaming, especially if the engine had worked over Shap as well, that drivers got the habit of stopping for assistance just in case they became casualties on the Bank. Many Beattock men must have grudged the trip behind a Pacific with about half her load.

The former Caledonian 0–4–4Ts, used almost exclusively for over half a century, are now honourably worn out, and drivers say it takes them all their time to steam the ten continuous miles, and they are "nae pushin' ower hard at the top." The Fairburn 2–6–4 Tanks are now a welcome relief, and at the time of writing the complement at Beattock Shed is six 0–4–4Ts and six 2–6–4Ts.

Many stories have been told, most lacking in confirmation, of trains running away from their bankers, or southbound freights getting out of control on the descent.

Despite grouping, followed by nationalisation, Beattock Bank is still as interesting a spot to spend a day as in the heyday of the Caledonian Railway. The variety of locomotives is still with us, though it must be admitted that with few exceptions the same variety could be seen on many other main lines in our island. Main line trains are principally in the hands of Stanier Pacifics, rebuilt Royal Scots, and Clans, with earlier Stanier 4–6–0s on lighter trains, while at the time of writing Britannia 4–6–2s are getting odd turns. Black Fives predominate on the faster freights, while Austerity 2–10–0s and 2–8–0s are on the slower ones. Even an odd former C.R. 0–6–0 may trundle along for good measure,

(*Continued on page 48*)

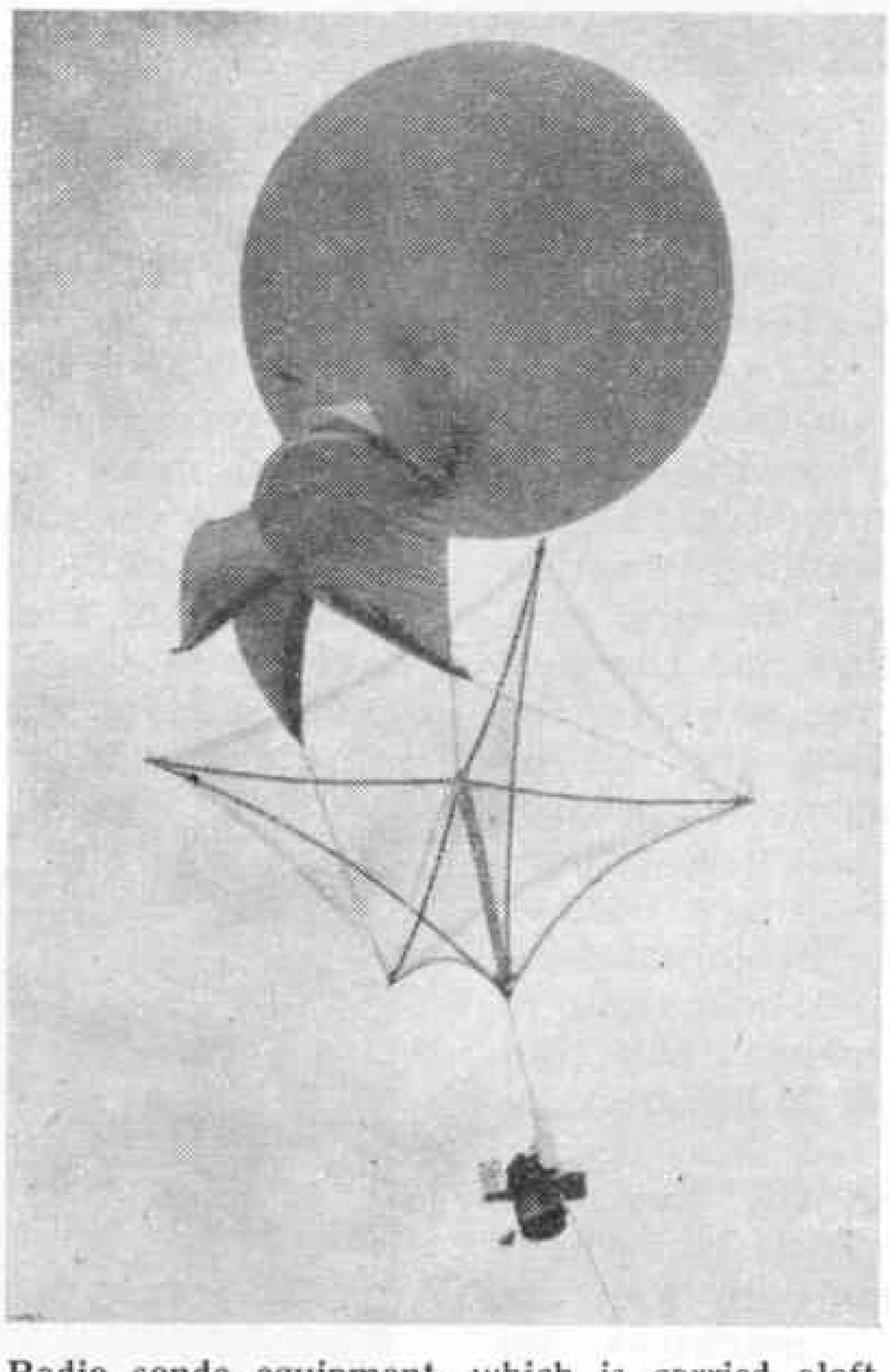
Weather!

The Forecasts *are* Improving

By David Bowen, F.R.Met.S.

THE bad summer last year has made us more than usually critical of our weather forecasts—especially occasional bad ones! The forecast of last Whitsuntide in particular, which was considered to be a classic failure by holidaymakers, if not by meteorologists, we now know to have been too optimistic. Fine weather, interrupted by only a few thunderstorms, was predicted, whereas the thunderstorms that occurred were so universal that they cut out even the hard sought bright intervals. Bank Holiday crowds hate nothing more than to be sent out, coatless, for sacrifice—and who can blame them?

Fortunately the Meteorological Office issued an apology, even if it was not a very full one, but I was surprised by one thing. The best excuse of all — that four-day forecasts, as given on Bank Holidays, are still in the experimental stage —was not put forward officially; it was mentioned only casually by the duty forecaster on television. Forecasts for 12 hours, each with a further outlook for another 12 hours, are all that is claimed to be possible from the information available and the latest techniques.



Radio sonde equipment, which is carried aloft by a balloon inflated to a diameter of about 6 ft. The triangular net is the radar reflector. The balloon expands as it rises—and may eventually look like a flying saucer!

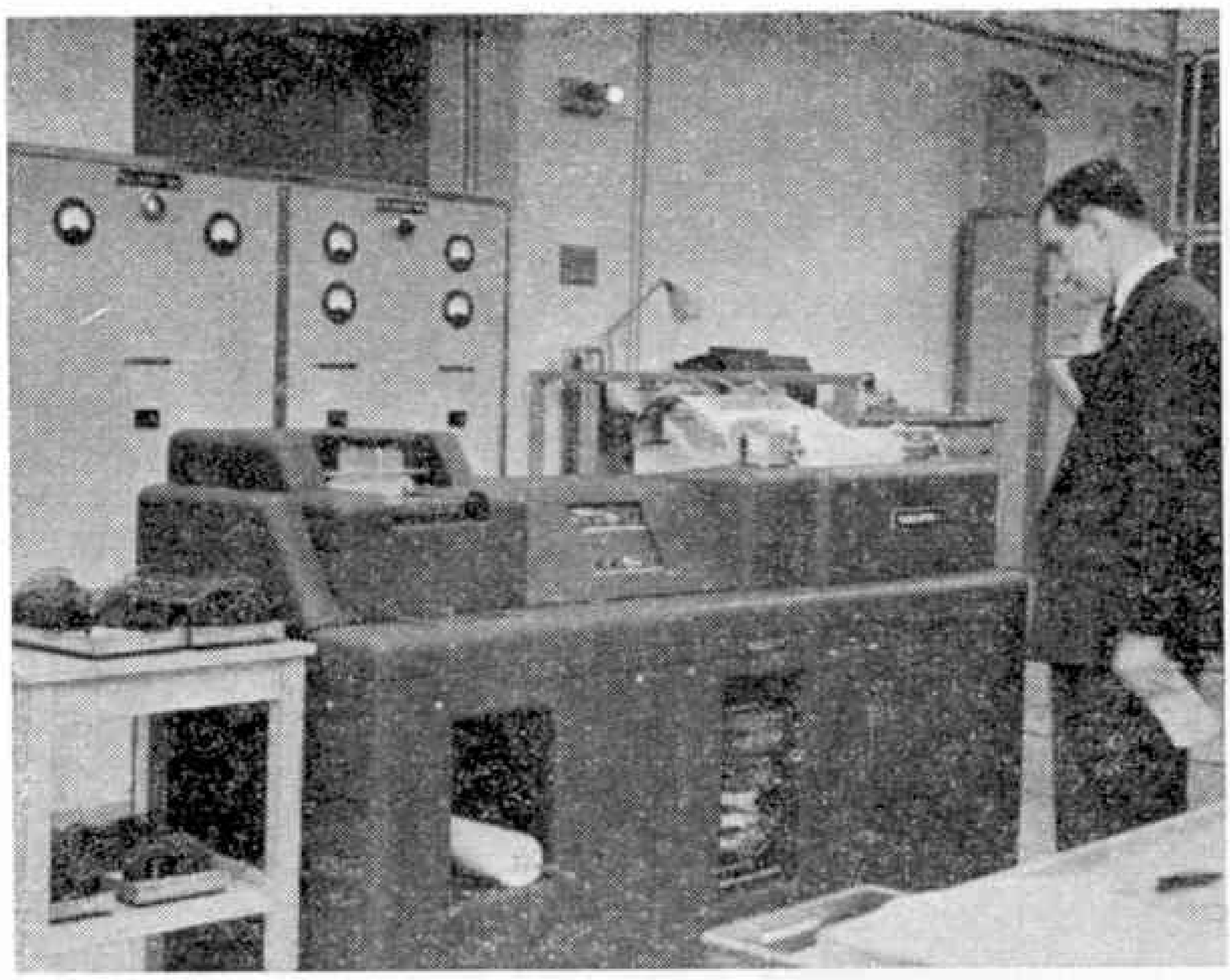
Have, then, the standard short-term forecasts improved as a result of these latest techniques, backed up by the use of revolutionary new equipment? We have a right to ask this question, and to ask it every year if necessary.

A year ago I would have said *No*. Now my answer is definitely *Yes*. I add only the reservation that the forecasts are less accurate in the West Country than they are elsewhere—which is only natural, seeing that most of our weather comes from the west and is difficult to time with any exactness until almost the last moment. Nevertheless, the forecasts certainly seem to have reached the claimed average accuracy of 90 per cent. if they are considered for all parts of the country and over a period of at least a year.

It is difficult to apportion credit for what amounts to just a very gradual improvement in the forecasts, but mention should be made of the special control room in the Meteorological Office's London Headquarters, which is illustrated on the next page. This is equipped with electronic computors, or "weather brains," to give them their more popular name. It is possible at last to use these machines in everyday forecasting, and not merely experimentally. You might then consider it reasonable to expect forecasts of nearly 100 per cent. accuracy in the near future, and not only 12-hour forecasts, but detailed and accurate long-term ones as well.

If you are indeed thinking along these lines the experts will try to prevent you from doing so! The brains are only an aid to forecasting, they say, not the complete answer. The vast ocean of air in which we live is too complex to analyse all at once, whether with computors or by the basic method of physical reasoning tempered by experience.

So the new brains are used for what is called pre-forecast work, a job for which



The electronic machine used by weather experts for mathematical forecasting. The results of its calculations are printed on a continuous roll of paper.

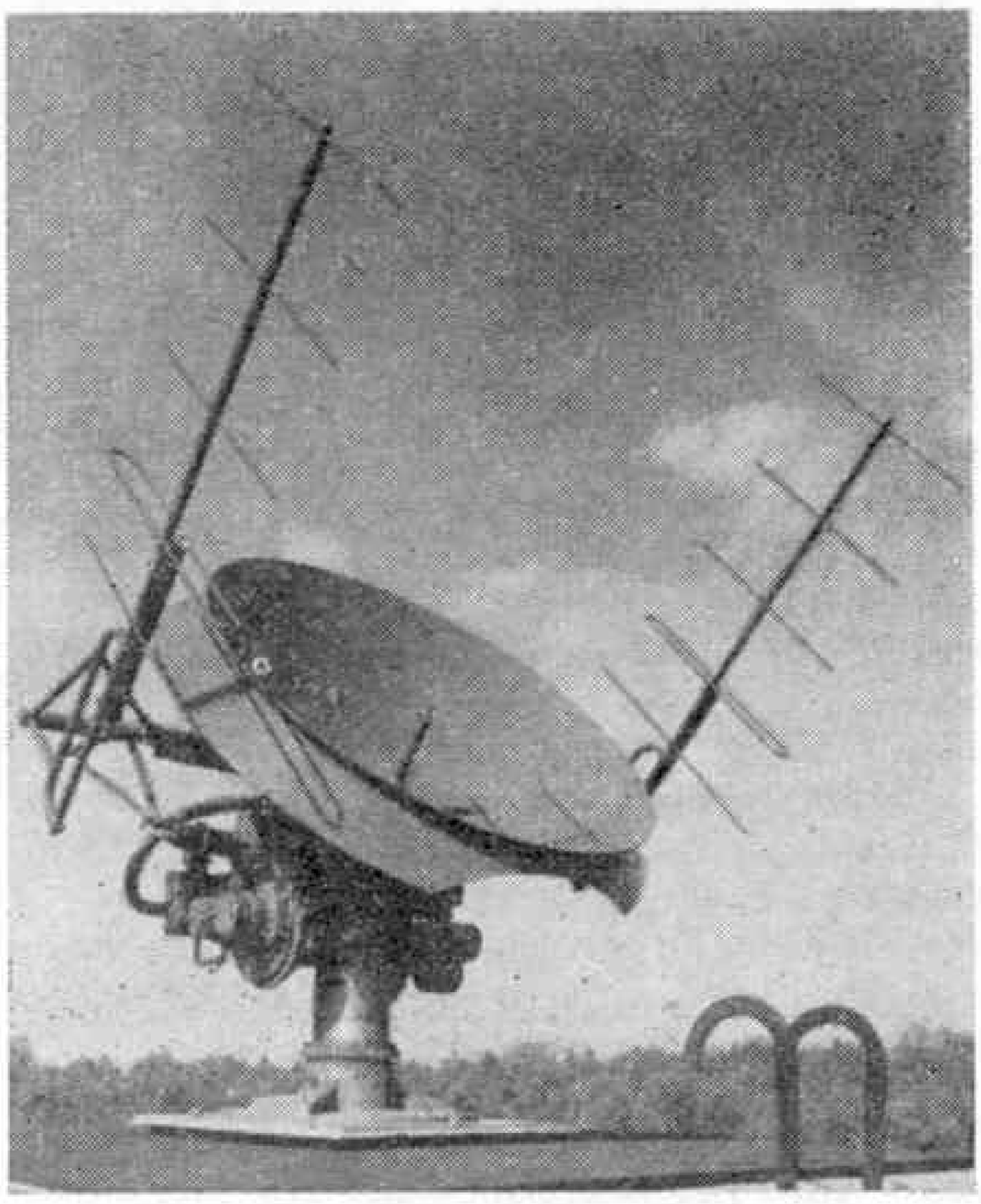
they are admirably suited. They are fed every hour with a huge list of figures representing atmospheric pressures over the North Atlantic and Northern Europe, and interpret these in terms of the movements of the main weather systems likely to affect Britain. Given these facts, the duty meteorologists are able to gaze at their all too static looking weather charts with a much more knowing eye. They must, of course, allow for the fact that even the results of the work of the electronic brains themselves are not at present 100 per cent. accurate, because the equations devised for their use, without which they would be absolutely useless, are not perfectly accurate in themselves. They take into account the behaviour of a simplified atmosphere rather than that of the real one, which still holds from us many intricate secrets.

No less wonderful than the electronic computors and, judging by their appearance, just as difficult to use, are the new "radar sonde" machines for sounding the upper atmosphere. Two of our illustrations show the different sections of the radar sonde that is now to be seen at the specially built weather station at Crawley, Sussex, and which is scheduled for operation at eight British stations in all, as well as on the Continent. Each complete unit cost £20,000.

How does the radar sonde work? First, you will remember that famous war-time invention, the *radio* sonde balloon. It was built to carry a portable radio transmitter far into the upper atmosphere; and this, while ascending, broadcasts information on the temperature, pressure and humidity to its base. When the winds are strong, however, and carry the balloon a long distance horizontally as well as vertically, the broadcasts fade out all too soon.

The new radar sonde overcomes this difficulty. The ground unit not only receives information from the rising transmitter, but in turn interrogates it by radar. The process is quite automatic. As a result, a horizontal range of 100 nautical miles has been achieved, and a maximum operational height of 20 miles.

The manufacturers of the new radar sonde system, the Mullard Radio Company, envisage a world-wide network of radar sonde stations that will lead to immediate improvements in forecasting techniques,



The radar aerial unit of the newest radar sonde system.

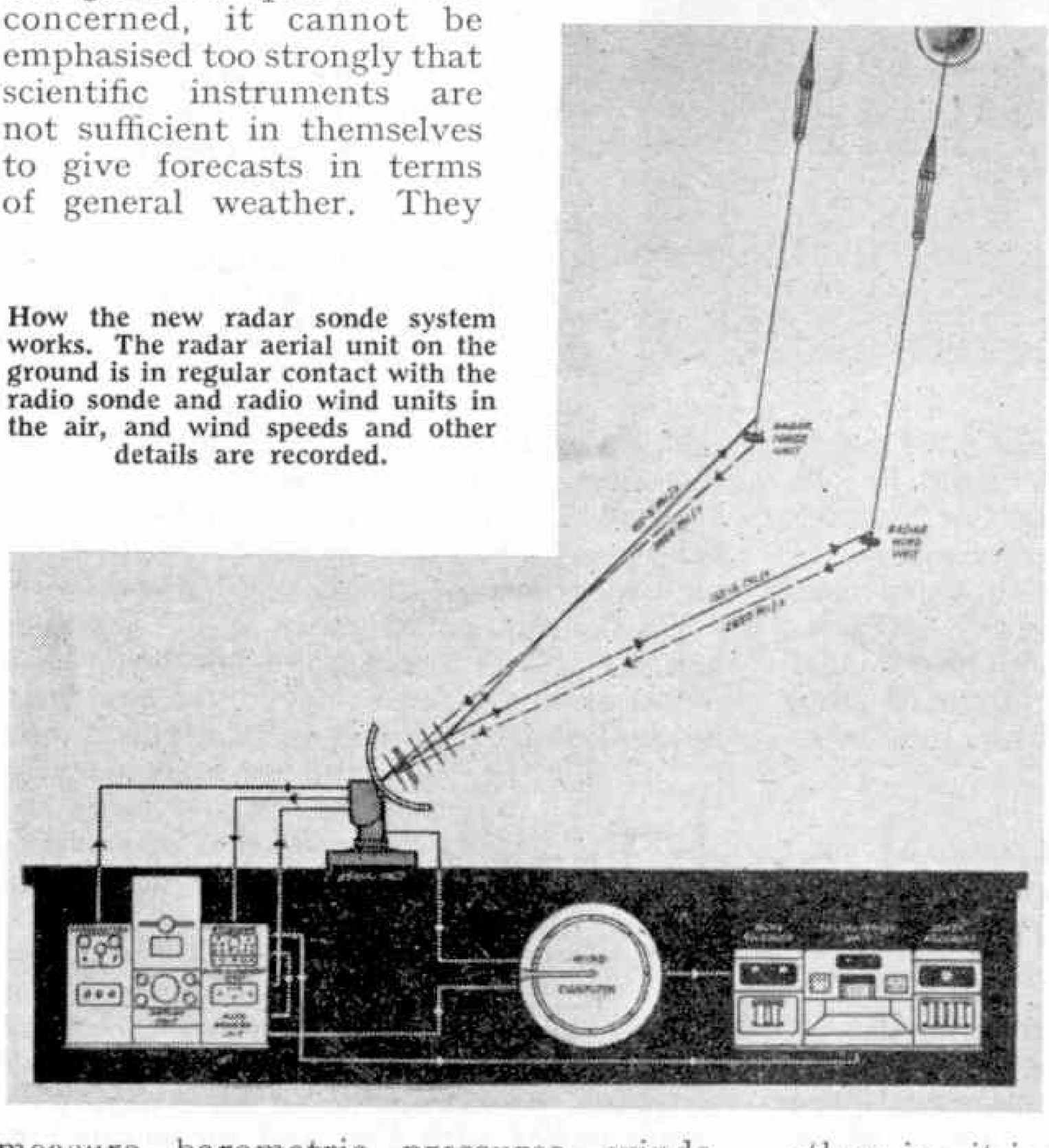
and will enable us to get a better picture of the more distant and little known climatic changes in relation to our own.

High flying aircraft in particular are deriving benefit from the new forecasting aids. The electronic computors are helping the forecasters to tell much more readily what weather changes are taking place over the blank sections on their charts from which there are no ship reports; and Atlantic air navigation is as dependent on good forecasts today as it was ten years ago, when air speeds were slower. The wind speed and direction must be known for all the levels through which aircraft have to fly.

As far as the forecasts for the general public are concerned, it cannot be emphasised too strongly that scientific instruments are not sufficient in themselves to give forecasts in terms of general weather. They measure barometric pressures, winds, temperatures and so on, but when information is required for more than one of these elements and for a general area rather than for an exact route, as in the case of aviation forecasts, the meteorologist's personal judgment is often a crucial factor. He must consider the many topographical factors within the area, all of which affect different types of weather in different ways.

At certain times when, for one or more reasons, the forecaster gets less information than usual, his judgment can make all the difference between an accurate and a very inaccurate forecast. If you like, you can accuse him of making a bad guess when the forecast goes wrong. But if you do this, remember too that his opinion, unlike a lay opinion, has more than a fifty-fifty chance of being correct.

To be pressed for a forecast when there is a dearth of information on which to base it is one of the most harassing experiences I know. That is why meteorologists seem to be extra cautious on some days, and why any new device to reduce errors is treated with such enthusiasm at forecasting headquarters.



How the new radar sonde system works. The radar aerial unit on the ground is in regular contact with the radio sonde and radio wind units in the air, and wind speeds and other details are recorded.

New instruments, though, are not the only things that help in this respect. Experiments go on all the time in the Napier Shaw Laboratory at Dunstable (named after the famous meteorologist) to improve forecasting techniques, and this laboratory maintains close contact with research centres all over the world.

If we take a hint from Dr. O. G. Sutton, the present Director of the Meteorological Office, we must try to avoid being either too hopeful or too pessimistic about the forecasts. Both these extremes are dangerous. During the war, when the new instruments we know today were first coming into production, we were far too hopeful. Now, after a bad summer in which the bad forecasts have been more noticeable than they would have been otherwise, it is all too easy to forget about the good work the Met. Office is doing and to call the forecasts a waste of time and money.

The present allowance of between £2 and £3 million per year for the National weather service is a very necessary investment. Industries all over the country, as well as many commercial firms, are learning to profit by using the forecasts, and the authorities are sparing no pains to adapt their services to meet particular needs. Among the (continued on page 48)

That wonderful Danish veteran, the 1886 Hammel Dog Cart, crossing Westminster Bridge during the 1954 Veteran Car Run to Brighton.

Road and Track

By Peter Lewis

WHEN Mr. Tom Lightfoot of Epsom, Surrey, asked me if I would like to go with him on the Veteran Car Run to Brighton in his 1902 Panhard-Levassor, I was not slow in accepting such a generous offer. There was a record entry, with no car younger than 1904, and the oldest veteran of them all—by eight years—was the 1886 Hammel Dog Cart from Denmark. This wonderful old motor car, claimed to be the oldest car in the world still running, was allowed to start at 8 a.m., half an hour earlier than the first cars of the main body, so that it would have a sporting chance of reaching Brighton before nightfall. We watched the driver turn the steering wheel to the right in order to take the first left-hand turn. This could prove disconcerting, but a maximum speed of 6 m.p.h. from the two-cylinder, horizontal four-stroke engine gives the driver plenty of time to deal with emergencies.

At 8.30 a.m., by which time the Hammel had covered about three miles, the first pair of veterans left on their fifty-three mile journey to Brighton. Competitors thereafter left in pairs at half minute intervals, and at 8.52 precisely I leaned out of the front passenger seat of the Panhard, No. 92, shook hands with Mr. V. L. P. Davis, the Clerk of the Course, and we were off. Somehow we managed to make our way out of the park, bulb horn blowing furiously, through a dangerously narrow lane of spectators no wider than the car itself. On the way to Westminster Bridge we avoided two stray dogs, a group of wobbling cyclists and several hesitant modern cars, ignored a set of traffic lights and went right at a *Keep Left* sign by kind permission of the Metropolitan Police, all the time acknowledging the cheers of the crowd in the best processional manner.

In Streatham High Road our driver, veteran motor-cyclist Len Wilson, let the Panhard have her head and I held on grimly to my cap. "I've never seen so many people," shouted Len "they must be five feet deep on the pavements." And that is how it was most of the way to Brighton—cars, people, bicycles, motor cycles, learners on two and four wheels—and dogs.

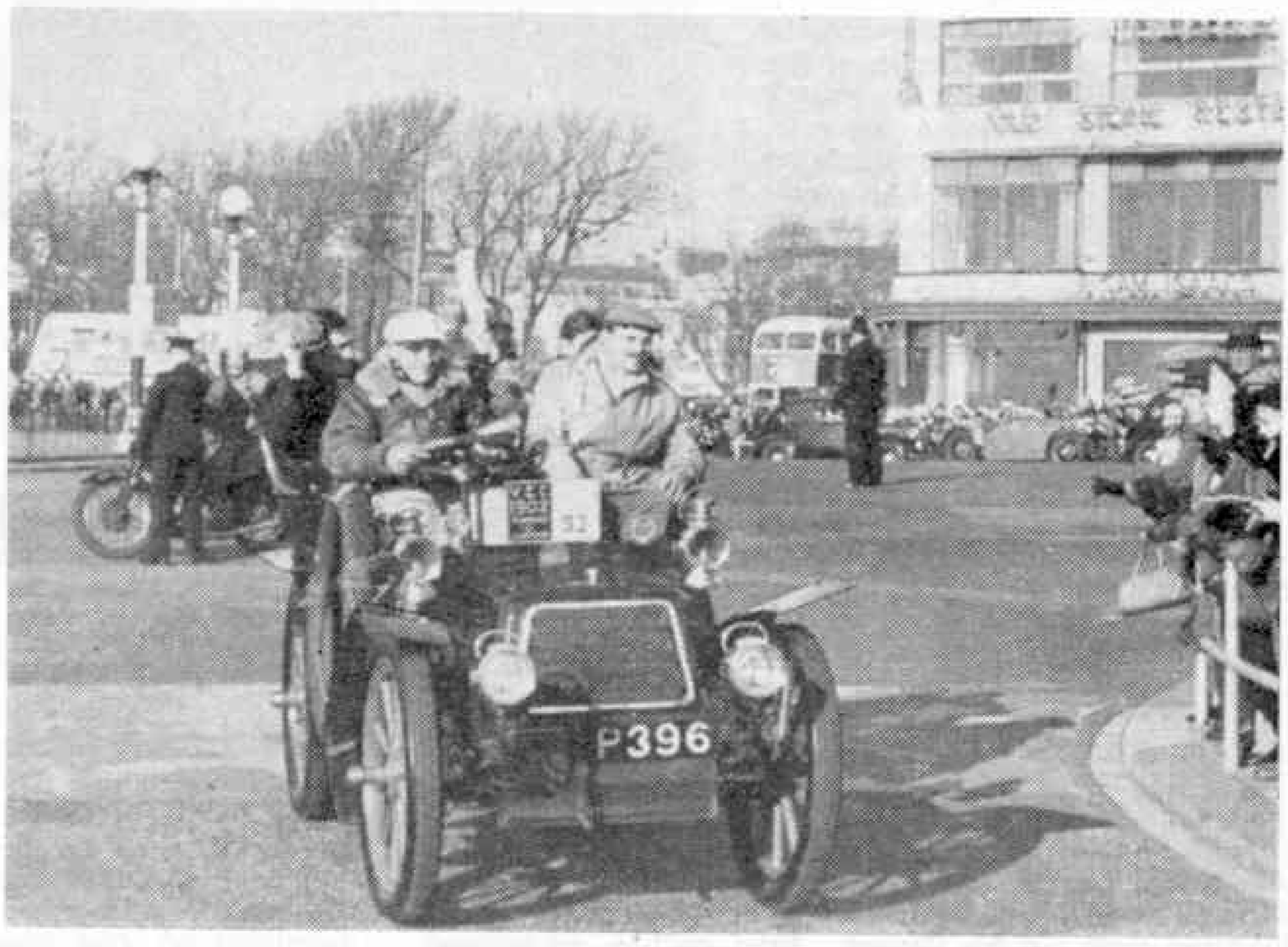
On the dual carriageway at Old Haslings Len let the Panhard have her head once more and we must have touched fifty miles an hour. She was as steady as a rock and her fifty-two year old engine gave no indication of working hard. We arrived in Brighton at 11.37—two hours and forty-five minutes after leaving Hyde Park and were the third car to cross the finish line. The Mayor of Brighton, Alderman W. G. Dudeney, J.P., shook hands with Len and presented him with a medal—a replica of the one awarded to those who took part in the original run in 1896—and a pennant for the Panhard. Len at 63 years of age had gained a notable success on his first Brighton Run.

And no one was more thrilled with our third place than fourteen year old Trevor Griffiths from Ewell, who had cleaned all the brass on the Panhard and earned himself a seat in one of the most colourful motoring events of the year.

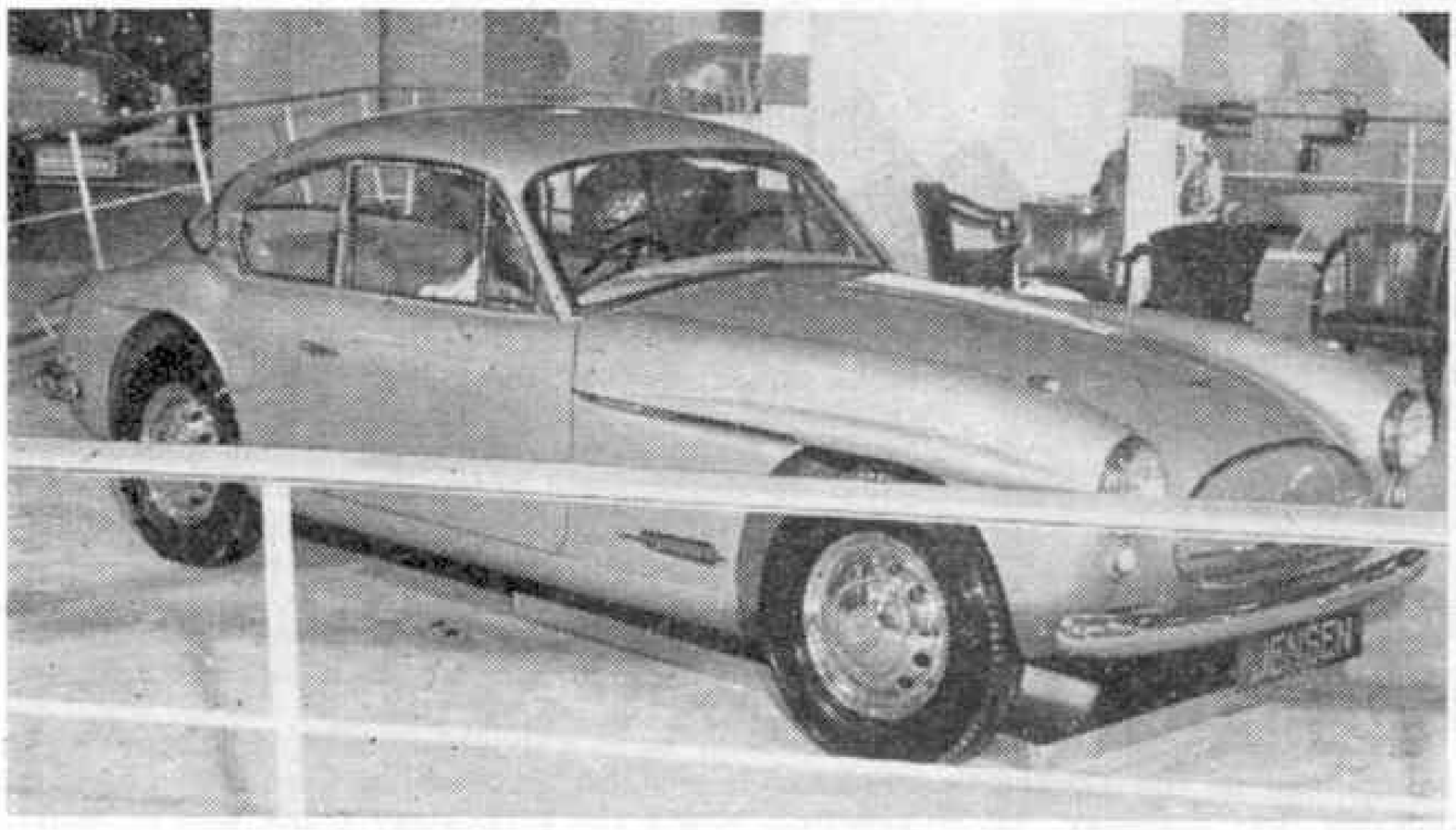
Those Austin Engines

I must admit that at the Motor Show I spent a lot of time on the Austin-Healey stand, where the new Austin-Healey 100 S was on view, together with the specially streamlined and supercharged car that actually topped the 200 m.p.h. mark at Utah during one of the runs. The 100 S, which has been developed from the cars raced at Sebring in America last March—hence the S—is a new production model at £1,250 for export only. It is powered by the four cylinder Austin A.90 engine and fitted with Dunlop Disc brakes. The speedometer reads up to 140 m.p.h.!

I also spent a long time on the Jensen stand, where the Jensen 541 sports saloon, with its light, fibreglass and aerodynamic body attracted a great deal of interest. To my mind it was one of the most attractive cars in the Show—as it was last year in prototype form. The 541 has a 4-litre six cylinder Austin engine, with three S.U. carburettors, and its top speed, not using the overdrive, is in the region of 110 m.p.h. Petrol consumption at 25–28 m.p.g. is good and 0–90 m.p.h. in twenty-eight seconds is a formidable manufacturer's claim. The Jensen is certainly good value at £1,821/10/5, including purchase tax.



The 1902 Panhard-Levassor owned by Mr. T. Lightfoot, Epsom, arriving in Brighton. The veteran motor cyclist Len Wilson is driving, with our contributor alongside him.



The Jensen 541 sports saloon at the Motor Show.

The World Championship

This season eleven major races will comprise the world championship series instead of the nine that counted towards the 1954 championship. With the exception of the Indianapolis 500 miles Sweepstake and the Argentine Grand Prix, they are all European—the Grands Prix of Monaco, Belgium, Holland, France, Britain, Germany, Switzerland, Italy and Spain. I hope to tell you more about these races in later articles.

Each of the above qualifying events carries points towards the championship. Eight points are awarded for a win, six for second place, four for third, three for fourth and two for fifth place. The best five performances of each driver will determine his position at the end of the season. If two drivers share a placed car each takes half the points. The fastest lap also takes a point.

Air News

By John W. R. Taylor

The first of British European Airways' two Westland S-55 helicopters about to leave Yeovil after successful acceptance trials. (See special article on page 30). Photograph by courtesy of Westland Aircraft Ltd., Yeovil.

North Country Gannet

A few weeks ago I was able to get a first-hand impression of the manœuvrability of the Fairey Gannet anti-submarine aircraft, when I flew as passenger during a demonstration at Ringway Airport of the first Gannet built in Fairey's northern factory at Stockport. The display included fast and slow fly-pasts, demonstration of the aircraft's ability to fly on one engine, bomb-door operation and two full-power dives, followed by steep climbs and rolls "off the top."

Production of the Gannet at Stockport supplements that in Fairey's southern group of factories, centred on Hayes, Middlesex, and will speed the already good delivery rate of these important submarine hunter-killers to the Royal Navy.

Famous Airports Closed

At 7 p.m. on Saturday 30th October, 1954, the last scheduled airline flight was made from Northolt Airport, when a DC-3 Pionair of British European Airways took off for Jersey. Five million passengers have passed through the Airport since it was opened for civil operations on 4th February, 1946. Three-quarters of them travelled by B.E.A.; but ten other airlines also flew into Northolt. Now it has gone back to the Royal Air Force, and London traffic will be concentrated at London Airport, until Gatwick is ready.

One day later, Lympne Airport in Kent also was closed for public use. Famous as the first British terminal of the cross-Channel air ferry service, it served little useful purpose after Silver City Airways opened their own specially-equipped airport at Ferryfield, as described in last month's *M.M.*

The Last B.E.A. Viking

There was yet another "farewell" on 30th October, when B.E.A. made its last Viking flight from Northolt to London Airport, carrying a party of aviation enthusiasts.

The fleet of Vickers Vikings, which in its heyday numbered 49 aircraft, did much to build up B.E.A.'s superb reputation for reliability and service. Altogether, these aircraft flew 65½ million miles on the Corporation's routes, earning £35 million of revenue and carrying 2¾ million passengers. Most of these Vikings have now either been sold to independent companies or are Cocooned awaiting disposal. So they will continue to be seen, and to render splendid service for many more years.

First close-up view of the sting in the tail of the Boeing B-47E Stratojet bomber. Photograph by courtesy of Boeing Airplane Company, U.S.A.

Tail Sting

Details have now been released of the automatically-controlled tail gun turret that has been fitted to Boeing B-47 Stratojet bombers for the past two years. It is shown in the lower illustration on this page.

Developed by the General Electric Company, the system includes two 20 mm. cannon, search-track radar, control equipment and an electronic computer. An enemy aircraft approaching the bomber from astern would appear as a bouncing "jag" in the straight green line running across the face of a circular radar screen. After centring this "jag" (or blip) in cross-hairs, the operator would switch over from search to track, and the guns would remain automatically trained on the aircraft causing the blip, irrespective of weather conditions or visibility.

The radar signals would also be fed through the electronic computer, which would calculate precisely when the attacking 'plane was in range. The guns would then be fired automatically.

One of the Hunting Percival Provost two-seat Basic Trainer aircraft just delivered to the Burma Air Force. Photograph by courtesy of Hunting Percival Aircraft Ltd.

Operation "Shwe Lin Won"

Shwe Lin Won is Burmese for *golden eagle*, the emblem of the Burma Air Force. So it was well-chosen as the code-name for the first long-range delivery flight from Croydon to Rangoon of that Air Force's new Hunting Percival Provost trainers. The journey took about twelve days and was flown in 17 stages, via the Brindisi–Athens–Cyprus–Persian Gulf route.

The aircraft, which flew in loose formation, were T.Mk.53 Provosts, basically similar to the standard R.A.F. T.Mk.1 trainer, but with provision for carrying two .303 in. machine-guns, plus four rockets and eight practice bombs under their wings. Powered by a 550 h.p. Alvis Leonides engine, they are fully aerobatic and have a top speed of 200 m.p.h.

Safe to Jump at 50 Feet

In the past, many pilots have lost their lives because their aircraft crashed from such low altitudes that they had no time to escape by parachute. It need never happen again, because in a test with the latest type of Martin-Baker fully automatic ejection seat, a dummy pilot has been ejected successfully from a Meteor flying at 512 m.p.h. only 50 ft. above the ground.

At this height, a normal type of parachute would have to be opened so quickly that the pilot would probably be killed by the "explosive shock" of the sudden deceleration. Secret of the new ejection seat is that it uses two small parachutes instead of the usual single pilot 'chute to pull open the main canopy. Opening one after the other in rapid succession, the two small 'chutes slow down the seat more gradually than one bigger one. Yet the pilot is still released automatically from the seat, with his parachute fully opened, without any appreciable loss of height.

The Earth From 16 Miles Up

At a press conference in America, Major Arthur Murray told reporters what it was like to fly more than 16 miles high in a Bell X-1A. He said that there is no doubt about the earth being round, because the curvature can be seen clearly from that height! But, with 95 per cent. of the atmosphere below him, other things looked a little odd.

Vegetation turned an olive drab colour, and dry grass looked like bright straw. The sun was so blinding in the clear sky that he could not read the data pad fastened to his knee. As a result, on high-altitude flights made since that time data pads printed on dark backgrounds have been carried.

1,000th Boeing Stratojet

A hint of the vast strength of the U.S.A.F.'s fleet of atom-bombers was given on 14th October last year when the Wichita factory of the Boeing Airplane Company turned out its 1,000th B-47 Stratojet. But it was only a hint, for these 90-ton, 600 m.p.h., six-jet bombers are also being built in large numbers by Douglas Aircraft at Tulsa, Oklahoma, and by Lockheed Aircraft at Marietta, Georgia, with the help of nearly 1,000 sub-contractors.

Twin Turbine Helicopter

The world's first twin turbine helicopter, illustrated on this page, has been built under a joint U.S. Army-Navy contract by the Kaman Aircraft Corp. It is a perfectly standard HTK-1 three-seat training helicopter, except that its usual 240 h.p. Lycoming 0-435 piston engine has been replaced by two Boeing 502-2 gas turbines. They give a total of 380 h.p., but weigh no more than the single piston engine, and are mounted side-by-side in the same position behind the aircraft's cabin, driving the usual Kaman system of side-by-side intermeshing main rotors.

Big advantage of the new installation is that HTK-1 can be flown with one turbine stopped to save fuel and increase its endurance, and yet has the full power of both turbines available for vertical take-off and hovering.

The Kaman HTK-1, shown above, is the world's first twin-turborotor helicopter, and a joint U.S. Army-Navy project. U.S. Department of Defense photograph.

Hidden Treasure

New Ways of Finding Lost Hoards

By Arthur Gaunt

THE days of treasure-seeking are not over, for even in this modern age many stories of ancient hidden hoards persist. For instance, King Solomon's Mines still haunt the minds of many treasure seekers. Efforts to locate them have so far been unsuccessful, yet explorers believe that information now being gradually amassed will eventually lead them to the locality from which the famous Biblical monarch obtained his gold. Vital clues may lie in Zimbabwe, that strange ruined citadel in Southern Rhodesia, barely 300 miles from the once prosperous seaport of Sofala, in Portuguese East Africa. Is Zimababwe the Ophir of Old Testament times, from which Solomon obtained the gold he lavished on his temple in Jerusalem?

That Zimbabwe served some very important purpose is certain, and investigations there have already revealed evidence of large quantities of gold being smelted in the vicinity a long time ago. But just how long ago is the question scientists hope to answer, for upon this point depends the decision about King Solomon's Mines.

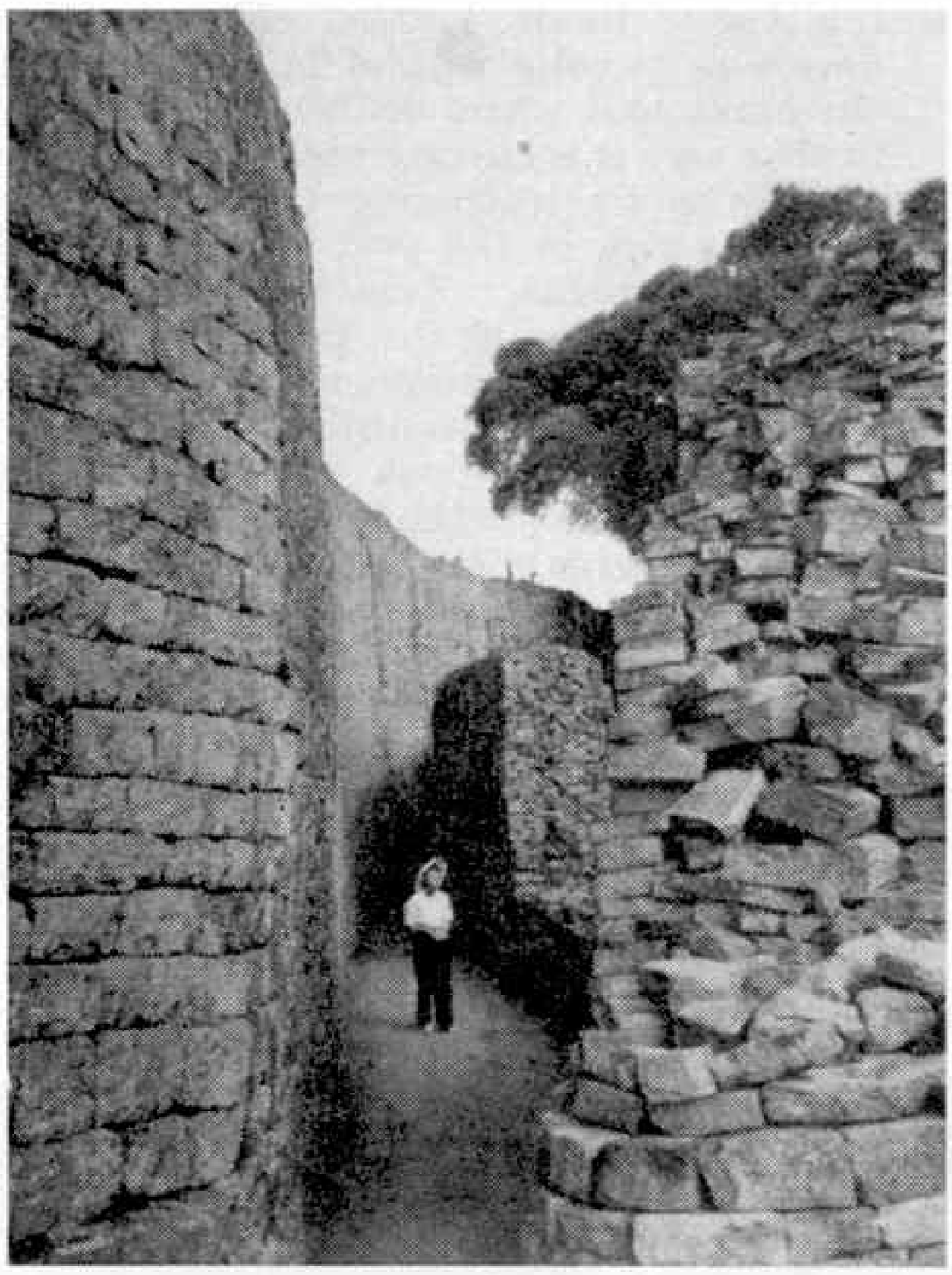
Some authorities declare that the citadel, consisting of oddly-shaped structures inside a wall 16 ft. thick, was built 3,000 years ago. Others say it was probably erected less than 1,000 years ago. If the latter age is the correct one, Zimbabwe cannot have any connection with King Solomon.

To solve the problem of Zimbabwe's age, samples of carbon are being taken from logs under the walls of one of the largest buildings. By testing these and measuring their radioactivity, it is hoped to determine whether they date as far back as some authorities believe. Trees and plants of bygone ages absorbed radioactive carbon when they took in carbon dioxide from the air. Once in the trees or plants this carbon began to lose radioactivity and the age of wood or charcoal from them can now be ascertained by measuring the amount of radioactive carbon they still contain.

The Mosque of Omar, in Jerusalem, is thought to be built over the hiding place of a vast treasure.

Treasure seekers are hoping that the tests will show the ruins to be roughly 3,000 years old, and in that event a new quest for the mines from which gold was brought to Zimbabwe may follow. This great citadel, by far the largest ruin of its kind in Southern Rhodesia, was discovered in 1868, but although undeniable evidence of gold smelting has been found, surprisingly little gold-bearing ore or alluvial gold has been discovered in the vicinity. The experts who believe Zimbabwe to be as old as Solomon's Temple in Jerusalem are thus led to think that the citadel was a fortified collecting point for gold obtained elsewhere, but the mines cannot have been very far away. The tests of the archæological remains may thus help future explorers, by enabling them to restrict the area they have to search.

There are other valuable hoards from Old Testament times waiting to be discovered. One of them is reputed to



Gigantic walls are a feature of Zimbabwe, Southern Rhodesia, long believed to be the source of King Solomon's wealth.

consist of jewel-studded vessels used in religious worship more than 2,000 years ago in a temple on the site of the present Mosque of Omar, Jerusalem.

Three sets of these golden vessels are known to have been used, and one set was taken to Rome in the year 70 A.D. after the temple was sacked by invaders. But the other two sets were spirited away by the the priests, and are thought to lie hidden somewhere beneath the present mosque.

The custodians of the Mosque of Omar, however, have consistently refused to allow excavations, and all efforts to locate the hoard have had to be made secretly. In 1911 a certain Captain Parker did succeed in exploring surreptitiously part of a tunnel in the foundations of the building. But the alarm was given and he had to flee for his life as religious fanatics pursued him.

An old record purports to state the exact spot where the treasure is hidden. Explorations have been hampered, not only by the refusal to permit excavations, but also by the several modifications and reconstructions of the mosque. But the use of modern equipment, on the lines of the mine-detecting apparatus perfected during the war, would probably enable the hoard to be located without seriously disturbing the foundations of the building.

Another vast treasure, which may be recovered with the help of equipment developed during the last few years, is the cargo of the East India Company's ship *Grosvenor*, which lies just off the coast of Pondoland, South Africa. The vessel foundered in 28 ft. of water only 100 yards offshore in 1782, and though several attempts to retrieve the valuable contents of her hold have failed, she is high on the list of possible targets for future salvage expeditions.

The cargo included crates of diamonds, sapphires, rubies, and emeralds, together with gold and silver ingots, from India. But even more valuable was the immensely precious Peacock Throne of the Great Moguls, from the old Imperial Palace in Delhi. It gets its name from the fact that its arms are in the form of twin peacocks, and these are studded with so many precious stones that the throne is said to be worth a cool ten million pounds!

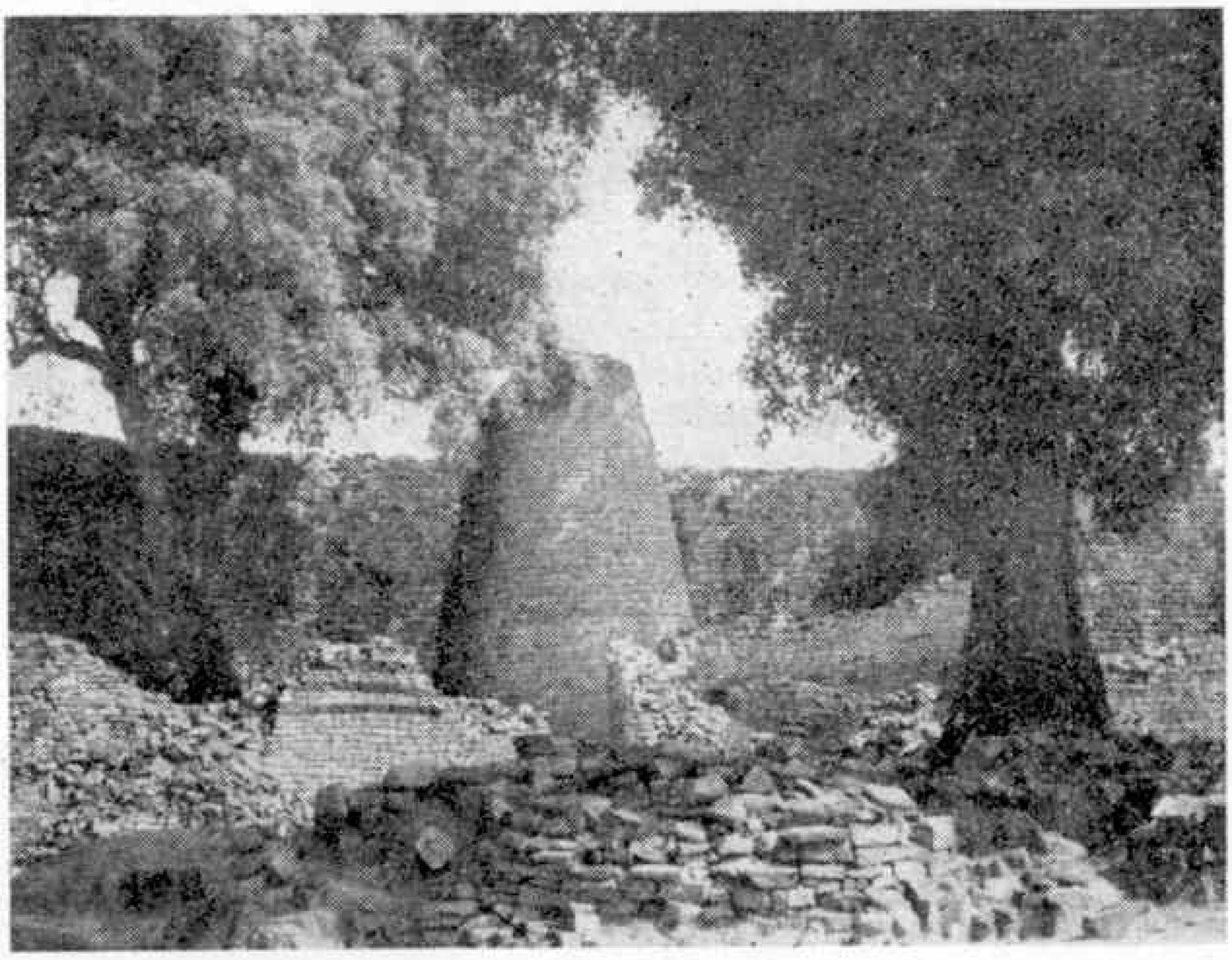
To-day, the *Grosvenor* and its cargo lie beneath shifting sands, and that is one

Jerusalem has many modern buildings, but its site hides many mysteries, including stories of hidden hoards of treasure in the city.

reason why the treasure has so far defied all efforts to recover it. At least two attempts have been made since the war, however, and the hoard is by no means written off as beyond salvaging, in these days of science.

Off the South African coast, too, lies the troopship Birkenhead, which went down a century ago. Although she carried no precious cargo, attempts have been made to get at her for the sake of the metal she contains. She went down off Danger Point, near Agulhas, and Britain's latest and biggest deep sea salvage ship, *Twyford*, has already made one attempt to recover some of the valuable metal.

The *Twyford* is the most outstanding example of the application of science to treasure seeking. She carries apparatus enabling salvage work to be carried out at depths hitherto impossible for such operations. Her diving equipment enables underwater explorers to work 400 ft. down, and although she was built primarily to facilitate the recovery of cargoes lost during the second World War, she will probably eventually be used in attempts to salvage much older treasure.



The conical towers of Zimbabwe are unexplained mysteries, as are the strange rites that apparently were once observed there.

Changing conditions, in fact, influence the search for sunken ships. With metals like copper and nickel in short supply throughout the world, vessels containing them are nowadays worth recovering, though formerly the cost of such attempts was too great to be worth while.

The Royal Navy has taken a hand in treasure seeking during the last few years, mainly to recover metal. Thus, in 1951 the submarine-lifter *Lifeline* was sent to salvage copper and nickel from two cargo ships that had been lying on the sea bed off the Cork coast since they were torpedoed in the first world war, and many other salvage efforts are scheduled for the Navy during the next few years.

Radar is being used to-day in efforts to rob Davy Jones' Locker. This wartime device is proving helpful in first locating the exact spot where sunken ships lie, and in that way it is cutting the cost of salvage operations by restricting the preliminary search, which in the past sometimes took several months. Television cameras, lowered into the depths, promise to assist, by enabling the explorers to see beforehand just what problems confront them, so that the salvage operations can be planned and hit-or-miss methods avoided.

Pirate hoards, of course, are a constant attraction for some treasure seekers, and countless stories are told about such hidden fortunes. One of the least-known but most absorbing stories concerns a Dutch ship that was driven ashore by pirates in 1656, off the West Australian coast. She carried 80,000 guilders, worth roughly £100,000 to-day.

For generations it was said that this treasure had been hidden somewhere nearby, having been taken ashore by those members of the crew who escaped drowning. In 1875 two members of an Admiralty team were cutting their way through thick jungle while making a geographical survey, when they suddenly came to a clearing containing a circle of stones. The stones had obviously been set up by men, and had been erected to mark the spot for some reason. But not until later did the finders hear the story of the Dutch ship sunk nearby in 1656, and when they tried to locate the circle of stones again they failed. Will this hoard be found by modern methods?

BOOKS TO READ

Here we review books of interest and of use to readers of the M.M. With certain exceptions, which will be indicated, these should be ordered through a bookseller.

"THE WONDER BOOK OF THE ARMY"

(Ward Lock 12/6)

It might be thought that the extensive mechanisation of the British Army that has taken place during the past 30 years or so had robbed this vital Service of much of its romance, but this is not so. Its glorious heritage of valour in the field of battle and of victories against great odds is undimmed by changes in the mode of active service. This is vividly brought out in this splendid book, which, in the words of Field Marshal Viscount Montgomery of Alamein, in his foreword, "tells the story of the British soldier—staunch and tenacious in defeat, kind and gentle in victory—a good comrade and a dependable friend."

The book covers pictorially and in text almost every aspect of British Army life, beginning appropriately with an excellent survey of the British soldier through the ages. Then follow chapters on Trooping of the Colour, Infantrymen at War, Tanks and their Development, Guns and Gunners, How the Army gets its supplies, and so on. The Customs of famous Regiments and the Cap Badges in the British Army are other special features, and there are chapters on the Army's Doctors, Women in the Army, Army Apprentice Schools, and stories of four great Commanders.

The abundance of splendid illustrations, both half-tone and in colour, maintain the high standard of these well-known "Wonder Books."

"LOCOMOTIVES OF THE GREAT WESTERN RAILWAY"

Part 7

(R.C.T.S. 8/6)

Once again the Railway Correspondence and Travel Society have produced a moderately-priced publication that contains the result of a vast amount of painstaking research and enquiry on the part of a team of members. Part 7 of this series of booklets on the locomotives of the Great Western Railway deals with the larger Dean tender engines in great detail, beginning with the grand "singles" and then going through the amazing variety and variations of those peculiarly Great Western outside framed 4–4–0s, Dukes, Bulldogs, Badmintons, Cities and so on.

There are many illustrations, showing the engines considered in their different states at different periods, with helpful diagrams.

The book, which is assured of a warm welcome by followers of Swindon practice, can be obtained from Mr. D. H. Wakeley, 18 Holland Avenue, Cheam, Surrey, price 8/6 including postage.

"A DOG'S LIFE"

By Police Supt. J. F. FLATMAN, M.B.E.

(Jordan & Sons 3/6)

Readers who are dog lovers will enjoy this ittle book, in which "Bill", a golden labrador gun-dog, describes light-heartedly his upbringing, home life and some of his adventures while on patrol and road safety work with his Master—for "Bill" is a policeman's dog. There are many interesting illustrations.

"AEROMODELLER ANNUAL—1954-5"

Edited by C. S. RUSHBROOKE

(Model Aeronautical Press 10/–)

Aeromodeller Annual, now in its seventh edition, established itself years ago as a valuable reference book for aeromodellers. Naturally enough, the 1954-5 issue has been compiled on similar lines to earlier editions and, as usual, provides an excellent summary of the main features of the aeromodelling year. There are also the usual special articles by noted experts of the hobby. These include a highly topical article on model helicopters, a contribution from Holland summarising A/2 sailplane development in Europe, and valuable notes on flight testing and development of model jet units and aircraft. On the plans side, there are interesting and novel designs by successful aeromodellers in eight different countries.

An excellent article on post-war British camouflage summarises valuable information not previously published in this form, and is supplemented by a useful full page plate in colour, both by the famous *Aeromodeller* artist C. Rupert Moore, A.R.C.A. He was specially commissioned to prepare the striking coloured frontispiece showing an incident during the Battle of Britain, which is also reproduced on the wrapper.

Aeromodeller Annual is, of course, lavishly illustrated with attractive half-tone pictures, line drawings and sectional plans. It concludes with the customary illustrated specifications of current makes of model aero engines, and tables listing contest results during the period under review.

"WHEN THEY WERE BOYS"

By PATRICK PRINGLE (Harrap 10/6)

The stories of the lives of famous men, especially those who from humble beginnings attained fame, and sometimes fortune, are always interesting to read. Generally, however, the accounts describe in detail the achievements that brought fame to their subject and say very little about those early years during which his character was being shaped. *When they were Boys* remedies this omission in the case of 16 famous men of widely different walks of life, and against the background of home and school, and the age and place in which each was born, shows them to have been not "little angels" but just normal healthy boys, with all that that implies.

These 16 boys, destined, as men, to make their mark in the respective worlds of Art, Literature, Music, Exploration, Science, Aviation and Engineering, include Leonardo da Vinci, Charles Dickens, Wolfgang Amadeus Mozart, James Cook, Michael Faraday, the Wright Brothers and George Stephenson.

There are many excellent half-tone illustrations.

"GREAT NORTH OF SCOTLAND RAILWAY"

(Stephenson Locomotive Society 3/6)

The centenary of the former Great North of Scotland Railway in September last has been celebrated by the Stephenson Locomotive Society in a special number of its Journal the September issue of which was largely devoted to Great North matters. This includes a general account of the railway and chronology of important events from the earliest days, with reviews of its train services, civil engineering features, signalling and many other items of interest. As might be expected, the treatment of the locomotives and rolling stock is particularly comprehensive.

Copies of this issue are available to non-members of the Society for 3/6, including postage, from Mr. T. P. Hally-Brown, C.A., 29 Waterloo Street, Glasgow C.2.

"AIRCRAFT FOR ALL"

By S. E. VEALE (Ward Lock 12/6)

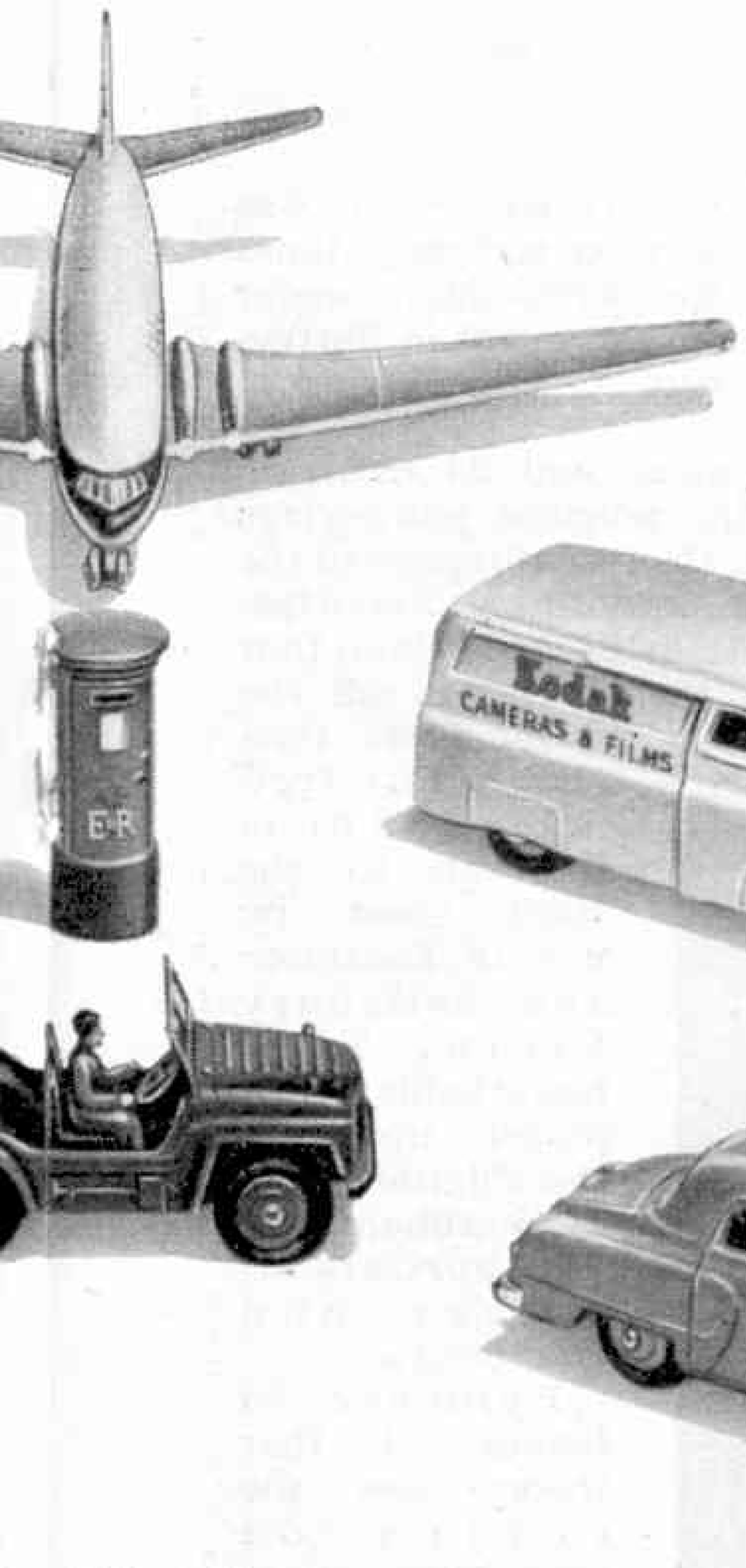
The spate of books on aviation continues. This one begins with the usual chapter on how flying began, and passes on to a brief review of the technical developments during the past 50 years or so that have transformed the aeroplane from the crude machine of the Wright Brothers to the high-speed, streamlined, jet-propelled aircraft of today. How an aeroplane flies, its design and construction, and the functions of its varied equipment are clearly explained. Helicopters, now very much in the news, are dealt with, and balloons and airships are not overlooked. The book has over 70 excellent half-tone illustrations.

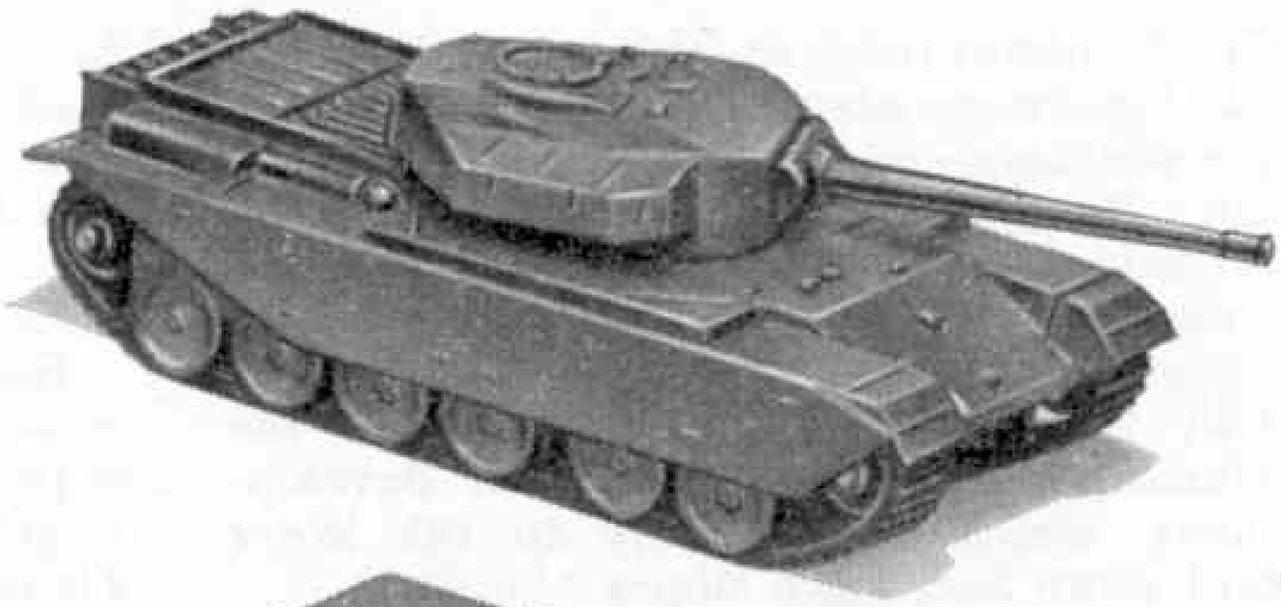
19
DINKY

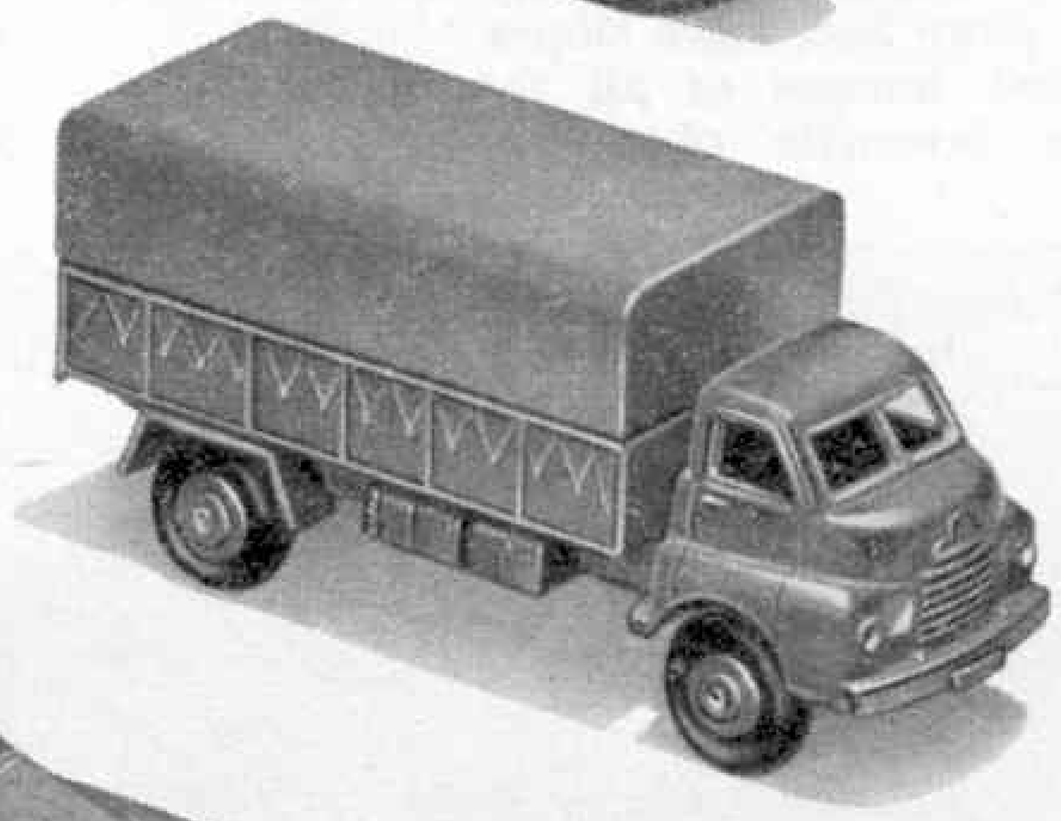
By **THE T**

WHEN you see the new Dinky Toys of 1954 together, as they are in the picture above, it is easy to realise how varied the items in this wonderful series are. In the centre of the scene above is the delightful little G.P.O. Pillar Box, flanked by the extremely attractive Austin Shell and BP and the Bedford Kodak Vans. But there is no need for me to go right through the list, as you will all know them. Probably you all have all of them! If not I hope it will not be long before you can complete your sets. The only reason why this could not have been done earlier by some of you is that the demand for them has been so great. Last year indeed Dinky Toys created new records, and even with the vastly increased production that followed on additions to our works during 1954, we were still unable to keep pace with the demand.

Last year too was notable for the beginning of a line of military vehicles in the Dinky Toys series, headed by the wonderful Centurion Tank, No. 651, which established itself at once as a universal favourite. The six others illustrated in the picture have proved equally popular, and their appearance has opened an entirely new field for Dinky Toys collectors.







1954
DINKY TOYS

THE TOYMAN

Another remarkable addition to the range was the magnificent D.H. Comet Jet Airliner. The beauty of this thoroughly modern air liner is fully realised in the Dinky Toys miniature, which is sleek and magnificently proportioned, and a sheer delight to look at and to handle. I have often been asked for more Dinky Toys aeroplanes, representative of the best in modern aircraft production, and here is a splendid example. There are others to follow.

Now what of 1955? We begin the year without a new Dinky for the month, and there was no new Dinky Toy for December either, as you know. But you also know why—we have been kept so busy making Dinky Toys already in our list that there has been little chance of getting on with the production of the new ones already planned. What these are I cannot tell you now, but many good things are in store.

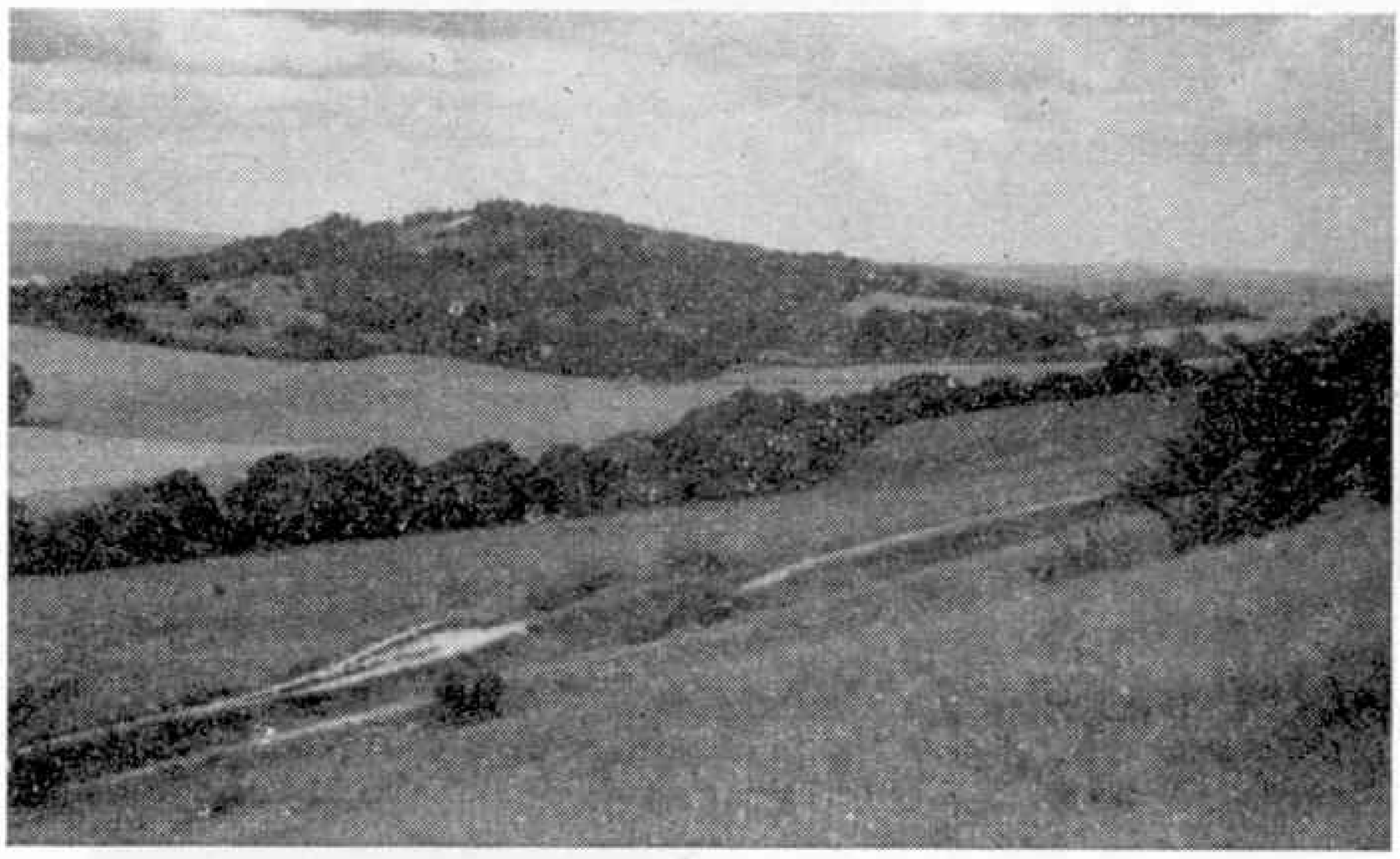
And I have one fine piece of news for you—the DINKY SUPERTOYS will return this year. These models will be made and finished more beautifully than ever, and will be remarkable for the wonderfully brilliant finish that will be given to them—and to Dinky Toys also—by the use of a new range of enamels. The result of this and other improvements will be to make them more attractive than ever.

Pilgrims Way

By W. H. Owens

THE oldest roads in Britain are the green trackways across the chalk uplands of the southern counties, which were trodden out by primitive tribesmen and hill farmers thousands of years ago. Such routes are of two kinds. There are the Ridgeways, which follow the crests of the hills from summit to summit, and the Harrow-ways, a somewhat later development, which keep mainly to the lower and more accessible slopes.

Most famous of all the Harrow-ways is a favourite objective for week-end ramblers in the Home Counties—the Pilgrims Way. This traverses parts of Hampshire, Surrey and Kent between the old cathedral cities of Winchester and Canterbury, and embraces a great variety of hill scenery.



The Pilgrims Way on the Surrey hills between Dorking and Guildford.

Over its winding course of 120 miles or so, the Pilgrims Way disappears and reappears continually. In many places the ancient track has become part of the local road system, or has been lost through generations of ploughing. But there are still long stretches where it can be clearly seen pursuing its original course along the edge of the hills, over farmland or through woods.

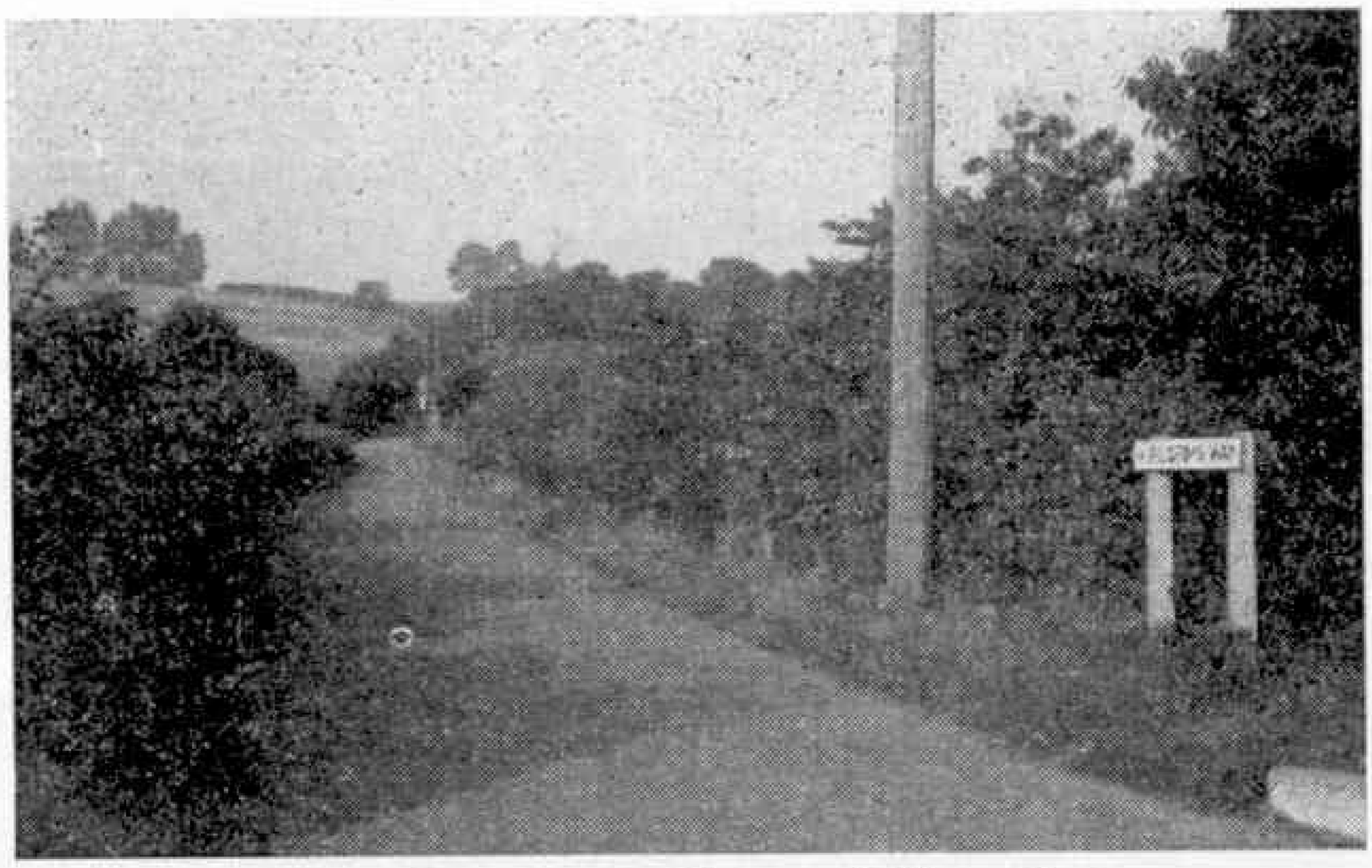
Efforts are being made to preserve the Pilgrims Way as one of the long-distance paths of our countryside, and some of its grandest viewpoints are already protected by such bodies as the National Trust. A new link towards its continuity was made a few years ago when stepping-stones were laid across the River Mole under Box Hill, a popular beauty spot in Surrey. There was a ford here for travellers from early times.

Because of its name and its romantic association with the religious journeyings of the Middle Ages, the real antiquity of the Pilgrims Way is sometimes forgotten. There are many authorities who claim that it was a part of the longest of all the Harrow-ways, which ran for more than three hundred miles from Cornwall to the Kent coast by way of Dartmoor and Salisbury Plain. This remarkable track joined up with the Pilgrims Way at Farnham, on the borders of Surrey and Hampshire.

Evidence in favour of that theory are the relics of prehistoric times that are to be found beside the Pilgrims Way, notably the famous Kit's Coty House and the Countless Stones near Aylesford, in Kent. Kit's Coty House is one of the best preserved cromlechs, or ancient burial places, in Britain. The three upright stones are capped by an enormous horizontal block, eleven feet in length.

The Romans never attempted any reconstruction of the Pilgrims Way, probably because it was too winding, and for long afterwards it was neglected. But in the three and a half centuries following the murder of Archbishop Thomas Becket in Canterbury Cathedral, some thousands of devout pilgrims are believed to have travelled along the route on foot. At least two of their hilltop places of prayer are marked to this day.

Both before and after its history as a road of pilgrimage, however, the trackway served generation upon generation of



The mediaeval thoroughfare near Chilham, Kent.

local farmers as a cattle drove. This was because it gave such easy access to the open grazing country and linked the scattered hillside farms. Some writers indeed have maintained that the pilgrim traffic along the Way has been greatly exaggerated and that its preservation is mainly due to its centuries of use as a cattle drove.

During the period of the Turnpike Trusts in the eighteenth century, travellers on horseback used to follow the Pilgrims Way wherever they could to avoid paying the excessive tolls demanded from users of the made-up roads.

Along the earliest miles, between Winchester and Farnham, much of the old trackway has vanished altogether, and there is a good deal of controversy as to the route it followed along the Itchen Valley. Once we get into Surrey, however, the line of the Pilgrims Way is defined by the bold and lofty escarpment of the North Downs, stretching practically the whole width of the county. It follows the Downs all the way, mostly along the edge of the escarpment but sometimes also in the valley below. Between Guildford and Dorking, in fact, there are two distinct and parallel tracks, one above the other.

On the North Downs above Lenham, Kent, the Way leaves the present road and crosses fields.

Just outside Guildford the Way climbs over St. Catherine's Hill past a ruined chapel at the summit. This was built for the use of pilgrims about six centuries ago. The east and west doorway, above ground level, were once approached by steps leading to an interior gallery, which formed a processional path for viewing church relics contained within. A mile or two further east is St. Martha's Hill—originally "Martyrs' Hill"—with a church rebuilt in 1848. The original, like St. Catherine's Chapel, was used by the old-time pilgrims. This hilltop may have been a place of worship in remote pagan times, for there are one or two standing stones and the suggestion of an earthwork there.

Towards Dorking and Reigate, the old trackway passes through some of the finest hill scenery, skirting picturesque unspoilt villages that nestle in the lee of the Downs. One of them, called Abinger Hammer, recalls the iron industry that flourished in Surrey before the Industrial Revolution. Its village shows a blacksmith striking the hours below a clock.

A narrow suspension bridge carries the Way over the London-Brighton Road on Reigate Hill, where it turns away from the edge of the downs into Kent. Over Wrotham Hill a descent is made to the Medway Valley, near Maidstone, and hereabouts is one of the wildest stretches. Then on it goes through Charing and Chilham to Canterbury, Chaucer's pilgrim route from London joining it on Harbledown Hill above the city.

Railway Notes

By R. A. H. Weight

The illustration at the head of this page shows a busy scene at Plymouth North Road as the Sunday up Cornish Riviera Express leaves for London. No. 5964 Wolseley Hall is piloting No. 6012 King Edward VI. Photograph by R. E. Vincent.

Locomotive Stock Changes

No. 70054 of the Britannia class had been completed at Crewe by the beginning of October. This was bound for the Scottish Region, as were Nos. 73062–4 of the class 5 4–6–0 mixed traffic type built at Derby Works, followed more recently by Nos. 73065 allocated to 19B, Millhouses, Sheffield; 73066, 20A, Leeds; 73067, 16A, Nottingham; 73068–9, 17A, Derby.

Small class 2 2–6–0s constructed at Darlington for the L.M.R. were Nos. 78031, for 11E, Lancaster; 78032–5, for 6K, Rhyl. More of the big 2–10–0s are in hand at Crewe, of which Nos. 92015–9 have been allocated to 15A, Wellingborough depot, Midland Division; then, starting a new series, comes No. 92030, for 35A, Peterborough E.R. shed. Nos. 80092 and 80094, 2–6–4Ts built at Brighton, went to 14B, Kentish Town, London; and No. 80093 to 15D, Bedford. The first of the similar class 4 tanks completed at Doncaster, Nos. 80106–7, were sent to operate from 61A shed, Kittybrewster, in the north of Scotland. Four of the smaller 2–6–2Ts of class 3 were turned out from Swindon Works in November. These were Nos. 82022–5, intended for service in the Southern Region, Exeter district.

More 350 h.p. diesel shunters of the 0–6–0 type are numbered and stationed as follows: 13082, 21A, Saltley; 13083–6, 16A, Nottingham; 13087–8, 8C, Speke Junction, Lancs.; 13132–4, 65F, Grangemouth. Nos. 11114–5 of the diesel-mechanical 0–6–0 shunting type have been allocated respectively to 34A, King's Cross, and 30F, Parkeston, Essex.

Included in a batch of Midland type 4–4–0 Compounds condemned for scrapping last autumn was No. 41054, which in 1928 made an exceptional non-stop run with six coaches from Euston to Edinburgh, 399¾ miles. About that time this engine and No. 1053 (L.M.S. numeration), also stationed at Camden, were sharing successfully in the haulage of the Euston-Birmingham 2-hr. expresses with Coventry stop. More D20 former North Eastern Railway 4–4–0s have been withdrawn, as have more ex-Great Northern and North Eastern 0–6–0s. Some tank engines withdrawn included a Q1 0–8–0 rebuild, No. 69925; also an N.E.R. A7 3-cyl. 4–6–2, No. 69770.

L.M.R. News and Travels

The Lancashire locomotive sheds 10D, Plodder Lane, and 26E, Bacup, have been closed. Apart from the Britannia Pacifics seen normally on *Irish Mail* and Manchester express services to and from Euston, others of this class on running trials after recent completion at Crewe and while awaiting dispatch to Scotland have been noted on the Euston main line, as well as a Clan 4–6–2 and the new 8P Pacific, No. 71000, *Duke of Gloucester*. The latter has been running Scottish expresses north of Crewe, but was lately reported as on loan to the Western Region. Engines of various types on leaving Crewe Works often make trial runs with ordinary trains to Shrewsbury or Birmingham. More new diesel railcar units are being completed at Derby, intended for West Cumberland and elsewhere.

The *Thames-Clyde* is one of the three expresses leaving the vicinity of Euston Road, London, for Scotland at 10.0 a.m. It is not so long-established as the famous *Flying Scotsman* or *Royal Scot* trains, but is one of the principal services by the Midland route from St. Pancras. I travelled most comfortably by it as far as the first stop at Leicester recently, the engine being one of the usual 3-cyl. 6P Jubilee 4–6–0s, No. 45607, *Fiji*, on a Kentish Town turn through to Leeds, with 10 coaches weighing about 350 tons including passengers, etc. Time was gained steadily on one of the quickest northbound schedules with 51 miles between Harpenden and Glendon, including considerable gradients, covered in 45½ min., the maximum speed on the descent before Bedford being 83 m.p.h. on a windy though bright day. Leicester was reached just after 11.46 a.m. For operating convenience a 4–4–0 Compound was there attached in front of *Fiji* to work to Sheffield.

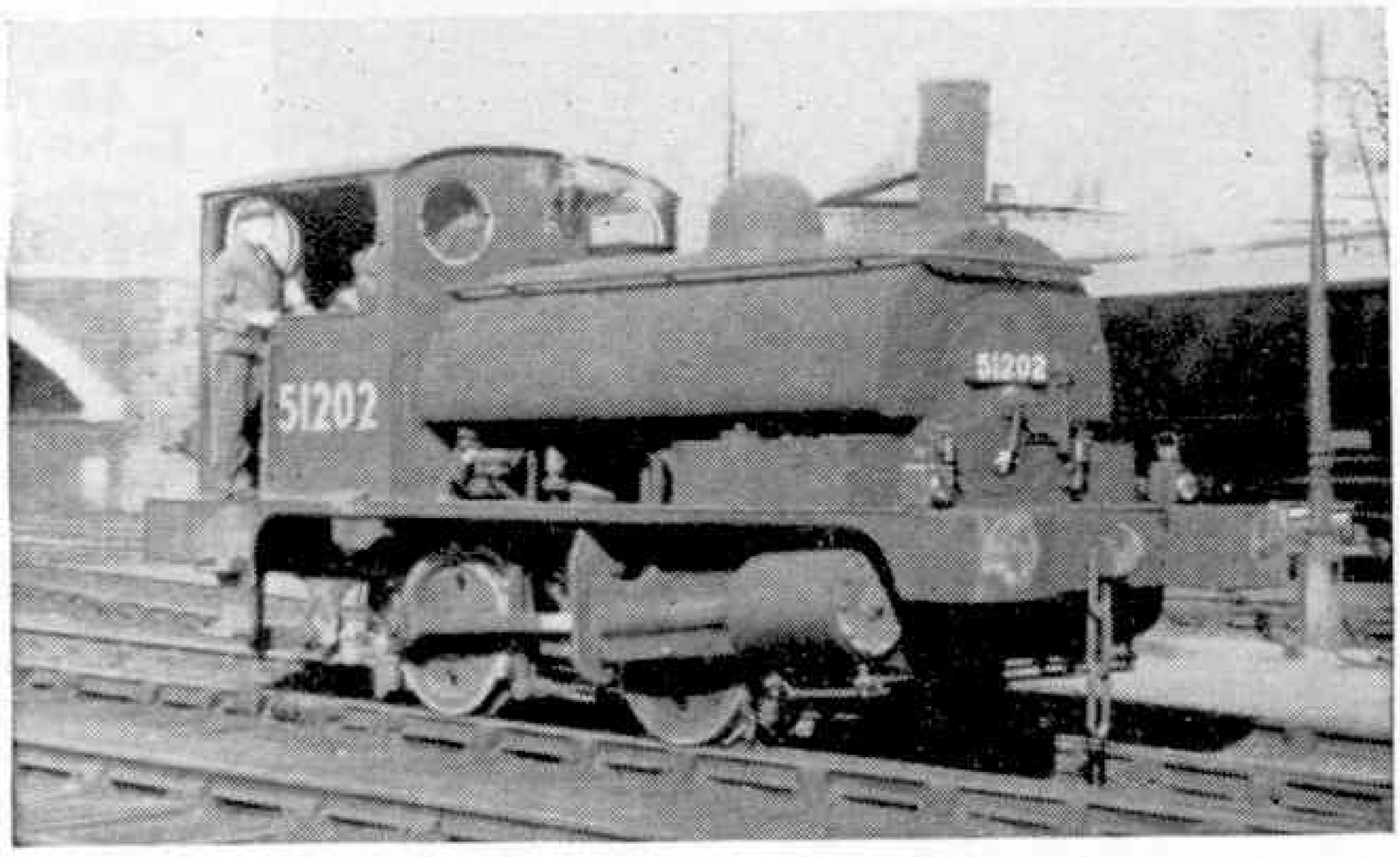
In the opposite direction No. 45659, *Drake*, also made the 99-mile run in between 106 and 107 min., including a track repair and signal slowing, with a heavier 380-ton train. A fast finish brought us into the St. Pancras stop in no more than 25¾ min. from passing Chiltern Green, 27¼ miles away.

The fine runs following were logged by Mr. Norman Harvey. The 8P Pacific No. 46229, *Duchess of Hamilton*, with a fairly light 8-coach load on the summer relief portion of the *Royal Scot* left Rugby 12 min. late after attention had been given to a defective brake valve on the third carriage, but on passing Willesden Junction, 77¼ miles, in 66 min., the whole of the lost time had been recovered by a keen Camden crew, with sustained high speed over an easily-graded route. An older 4–6–2 No. 46211, *Queen Maud*, on a Crewe turn hauling the down *Midday Scot* with a 12-coach, 410-ton load, improved upon the very fast 80-min. timing for the 82½ miles from Euston to Rugby stop lately introduced for the two down day Scottish expresses, by 1½ min. including a slight engineering slack, three times touching 80 m.p.h. or more, very similarly to a fine run with lighter train I recently reported behind the rebuilt Scot *Queen's Westminster Rifleman*.

An even tighter 79-min. schedule applies to the afternoon Wolverhampton express from Rugby to Euston, except on Fridays. *Leinster*, No. 45741, one of the more modestly powered 3-cyl. 4–6–0 locomotives of the Jubilee class usually employed on this service, made a grand effort with 10 on in charge of a Bushbury crew, passing Wolverton, 30¼ miles in 29½ min. then after a short signal stop attaining even time again before Watford, which was approached at 85 m.p.h. After that a technical failure in the block telegraph system caused delay.

Scottish Tidings

Another fine run was reported last summer by the *North Briton* Leeds-York-Glasgow express, which for its northbound journey shares with the up and down *Queen of Scots* the distinction of providing the quickest services between Newcastle and Edinburgh without a stop. On the occasion under notice one of the A2/3 Thompson 4–6–2s, No. 60521, *Watling Street*, manned by Gateshead shed, recovered rather more than the whole of a 7-min. late start from Newcastle with a 10-coach load. There was fine uphill work as well as maximum speed exceeding 85 m.p.h. along the East Coast route with its impressive glimpses of the sea and coastal scenery, bringing the *North Briton* into the great Waverley station, Edinburgh, in 125½ min. for the 124½-mile run from the North Eastern Region.



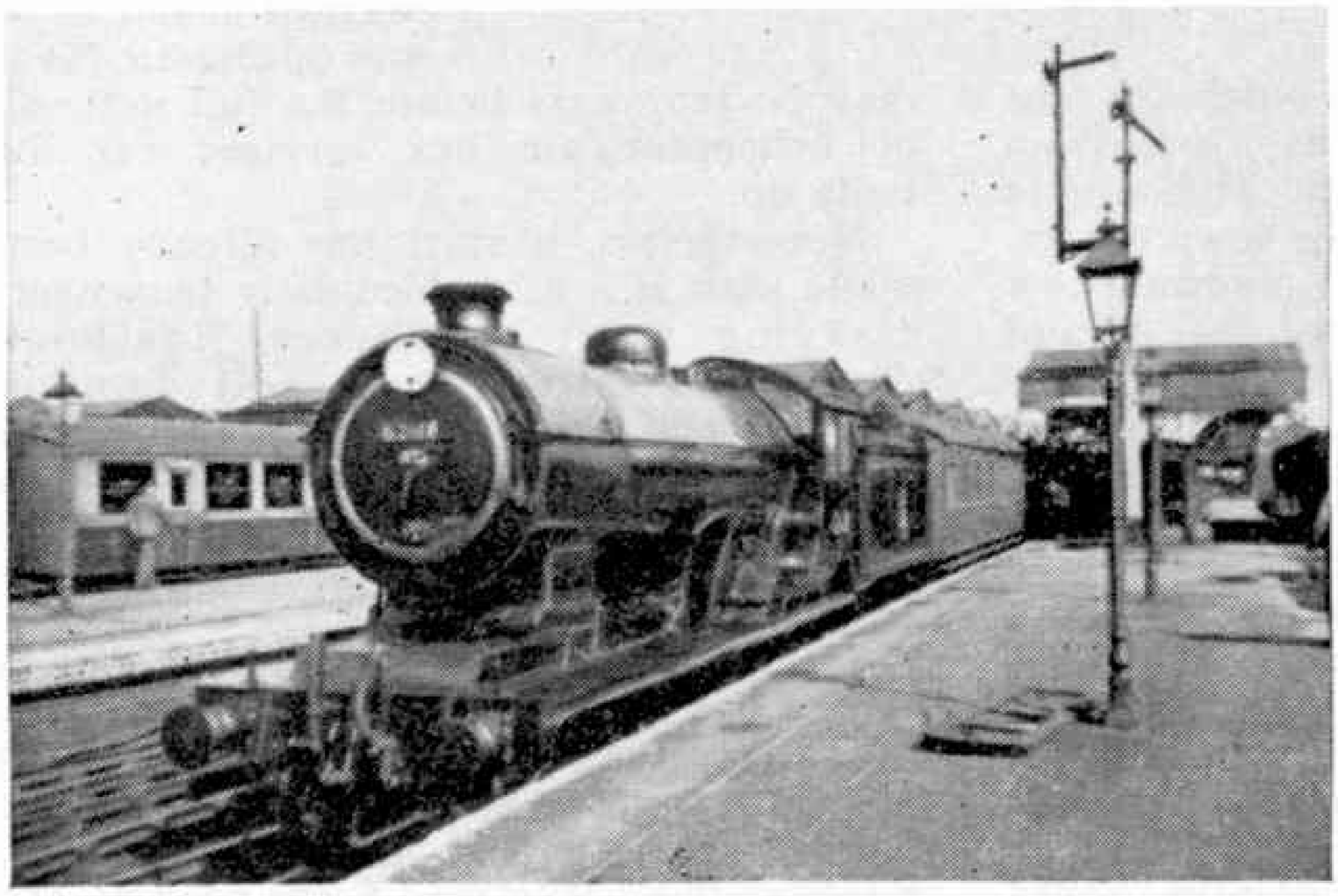
An ex-Lancashire and Yorkshire 0-4-0 "Pug" at Bristol, a long way from its native metals. Photograph by A. David Parkes.

It was interesting to hear later in the summer that the engine on this train from Edinburgh to Glasgow, Queen Street, for a day or two was L.M.S. type class 5 4–6–0 No. 44677, provided with "self-weighing" tender. Meanwhile L.N.E. type B1 4–6–0 No. 61140 similarly provided was working northward from Buchanan Street.

There is a considerable amount of interesting interchange of former L.M.S. and L.N.E.R. locomotives, together with duties operated by B.R. standard or other engines in Scotland which overlap beyond the old company or district boundaries.

Plaques in colour depicting a kingfisher in flight mounted on a copper background are mounted centrally on the streamlined casing of the A4 express locomotive No. 60024, *Kingfisher*, stationed at Haymarket depot, Edinburgh. There they were accepted at a ceremony from the donor, Lieut. A. F. Mortimer, R.N., who designed, made and presented these handsome mementoes.

Several West Coast expresses diverted owing to flooding last autumn were hauled into Newcastle by L.M.R. Pacifics, also a Royal Scot.



No. 62618, a Super-Claud of 1923 and former Royal train engine, still retaining much of the characteristic appearance, is here ready to leave March on a Cambridge-Peterborough train. Photograph by A. J. Gordon.

Photograph taken by the author, of the Westland S.51 helicopter in which he made the flight described in this article.

B.E.A.'s Helicopter Plans

By John W. R. Taylor

CONFERENCES are often rather dull affairs, with far too much talking and far too little action. But the one I attended some weeks ago was certainly not like that. Organised by the Aerodrome Owners' Association, its main purpose was to show members something of the progress being made by helicopters, and to tell them what they can do *now* to prepare for the time when helicopter air buses will link all important towns and cities in Britain and Western Europe.

The proceedings got off to a good start when the Mayor of Northampton—where the Conference was held—became the first passenger to fly from the new rotor-station on Midsummer Meadow, half a mile from the town centre. He flew five miles to Sywell Aerodrome in a Bristol 171, with an escort of Bell 47 and Westland S-51 helicopters.

I was able later to sample the S-51 myself, during a demonstration flight by Westland test pilot Derek Colvin. It was grand fun, because we took off backwards, climbing steadily in reverse to about 1,000 ft. Mr. Colvin then pushed down the nose of the S-51 and proceeded to demonstrate its manœuvrability with a series of very steep banks and circuits close to the ground.

The question most frequently asked about helicopters is "What happens if the engine stops . . .?" Mr. Colvin showed me!

After climbing to about 1,500 ft., he hovered for a while and, with a cheery "Here we go", switched off the S-51's Leonides engine. It was strangely quiet, except for the regular swish of the rotor blades whirling round in auto-rotation above the cabin. I expected it to feel as if the bottom had fallen out of the helicopter; but it didn't. We dropped rather faster than usual; but landed with only a slight bump and ran forward a few yards before coming to a stop.

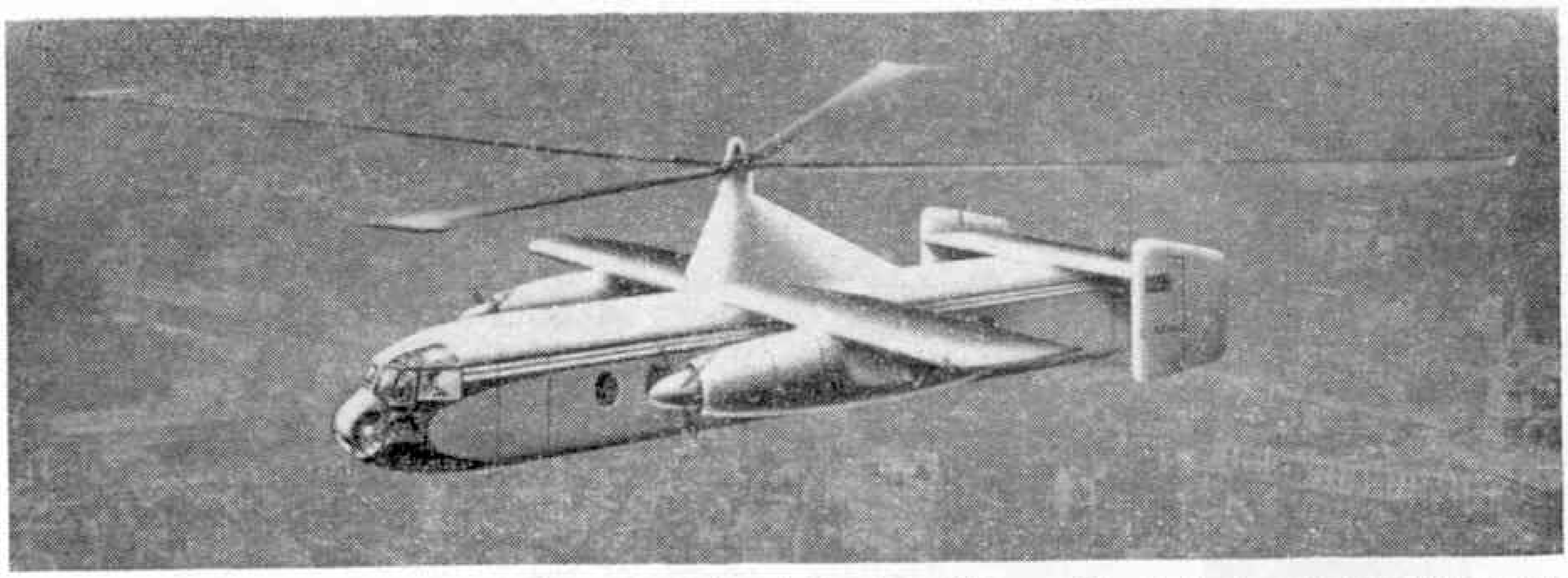
The engine was switched on again. We climbed vertically for about 1,000 ft. and made another engine-off landing, before hopping sideways to park on the edge of the aerodrome.

After that came more serious business—a talk by Mr. Peter Masefield, Chief Executive of British European Airways, on the Corporation's future plans for air bus services.

He began by pointing out that Britain is ideally suited for helicopter operations, because most of our big cities are less than 200 miles apart and there are more than 65 million people living within a 200-mile radius of London. But he warned us not to be too optimistic, as it may be ten years before the full network of helicopter air bus services can be built up.

Nevertheless, a start has already been made with B.E.A.'s twice-daily passenger-carrying service between Eastleigh Airport, Southampton, and London Airport; and there will be another major step forward in the spring of this year, when regular services are started between London Airport and the South Bank Site near Waterloo Station.

This does not indicate any change in B.E.A.'s determination to delay operation into city centres until twin-engined helicopters are available, to reduce the danger from engine failure. The two single-engined Westland S-55s used on the



Artist's impression of the Fairey 40-50 seat Rotodyne helicopter. This machine is large and powerful enough to fulfil British European Airways' requirements for a large inter-city "rotor-coach."

service will follow the course of the River Thames into London, and will be fitted with a pontoon undercarriage, so that they could alight on the water in an emergency.

In this form, they will carry only five passengers and luggage, which necessitates a single fare of 30 shillings to cover costs. But the flight will take only 17 min. compared with an hour by coach; and B.E.A. hope to run eight trips a day in each direction.

In about 1958, the Corporation plan to start their first scheduled international service from London to Brussels with twin-engined helicopters; followed in the early 1960s by a steady build-up of the ambitious 2,000-mile "Bealine Bus" network of internal and international routes from London, first to Paris, then Amsterdam, Manchester, Birmingham, Leeds, Bradford, Newcastle, Nottingham, Sheffield, Liverpool, Bristol and beyond.

To operate the complete network economically, Mr. Masefield explained, would require a helicopter able to carry 50 passengers at a cruising speed of 150 m.p.h. and at a cost of 6d. per mile per passenger. The Fairey Rotodyne, a prototype of which is due to fly early next year, promises to do even better than this and B.E.A.'s long-term plans may be centred on this aircraft, which is powered by two Eland turboprops.

Until it is ready, the Corporation would like to gain experience with the twin-engined, 30-seat Sikorsky S-56, if Westland build it in Britain.

An indication of the high cost of operating present-day helicopters was given by Mr. Masefield, when he said that a passenger flying from London to Birmingham in an S-55 would have to pay a fare of £14, compared with a first-class rail fare of £1 4s. 5d., if the service was not to be run at a loss. An S-56 could bring the fare down to £5, and, in due course, it was hoped the Rotodyne would offer a fare of £3. It would take only 40 min. for the journey, compared with two hours by train.

Mr. Masefield was followed by Wing Cdr. R. A. C. Brie, who told delegates that city centre rotor-stations of the future will have to be about 400 ft. square, with a total obstruction-free

(*Continued on page 48*)

Passenger disembarking from a B.E.A. Bristol 171 helicopter at London Airport, after a flight from Southampton. Photograph by courtesy of British European Airways.

Among the Model-Builders

By "Spanner"

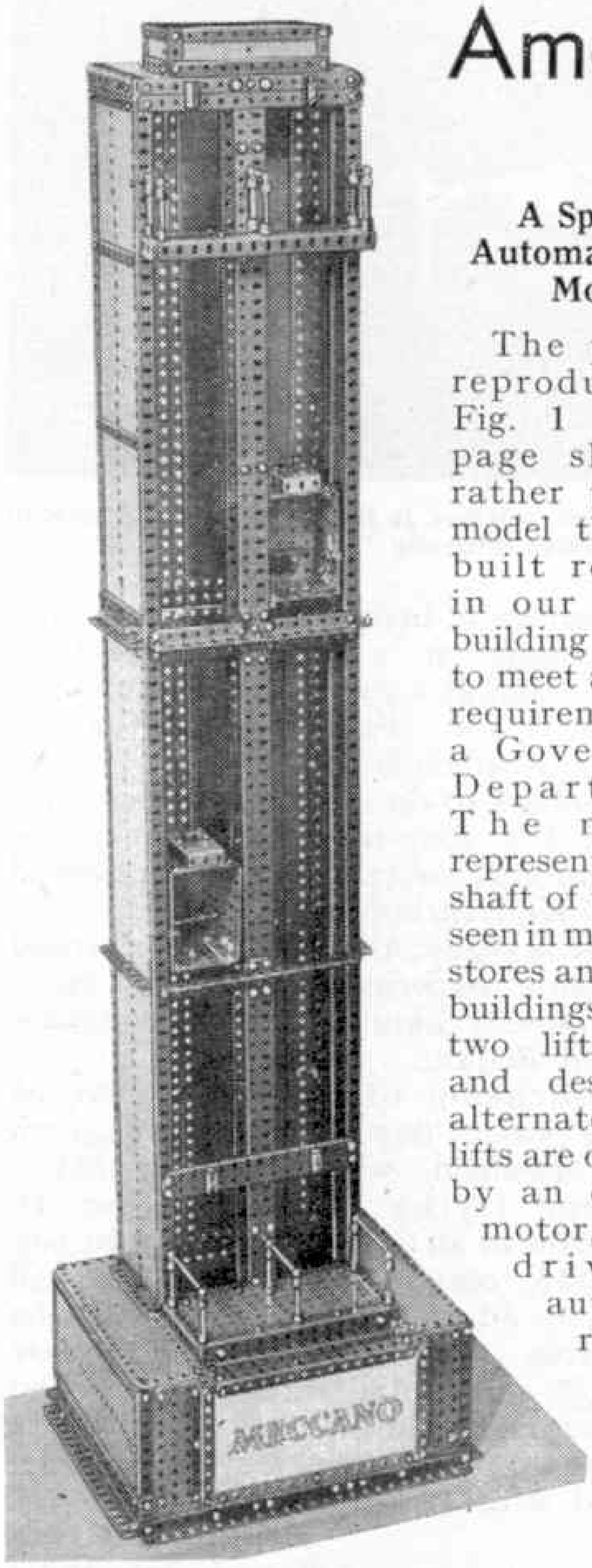


Fig. 1. The automatic reversing twin lifts model that is referred to on this page.

A Special Automatic Lift Model

The picture reproduced as Fig. 1 on this page shows a rather unusual model that was built recently in our model-building section to meet a special requirement by a Government Department. The model represents a lift shaft of the kind seen in most large stores and public buildings, with two lifts rising and descending alternately. The lifts are operated by an electric motor, which drives an automatic reversing mechanism similar to the one described in these pages in the September 1950 *M.M.* The lifts make a short pause when they reach the loading platforms before their direction of travel is reversed, and the entire operation is carried out automatically.

The lift guides are of an interesting type and are designed to ensure that the lifts slide freely, but are guided positively throughout their movement. For this reason Cord or wire guides, generally used in models of this kind, were not considered entirely satisfactory and instead an arrangement of Angle Girders was used. Long Angle Girders are bolted along the sides and at the centre of the tower, and two short Angle Girders are bolted to each side of each lift. The flanges of the short Girders are spaced apart sufficiently to allow them to slide freely over the Girders that form the guides.

This cheery young model-builder is Paul Craddock, Redditch, who was a prize-winner in a recent "M.M." Competition.

A model of this kind makes an unusual and attractive subject, especially when its operation is entirely automatic, and no doubt many readers will be having a go at making one for themselves.

A Simple Bearing for Small Cranes

One of the questions asked by model-builders that frequently appears in my correspondence concerns the construction of bearings suitable for supporting the cabs or superstructures of swivelling

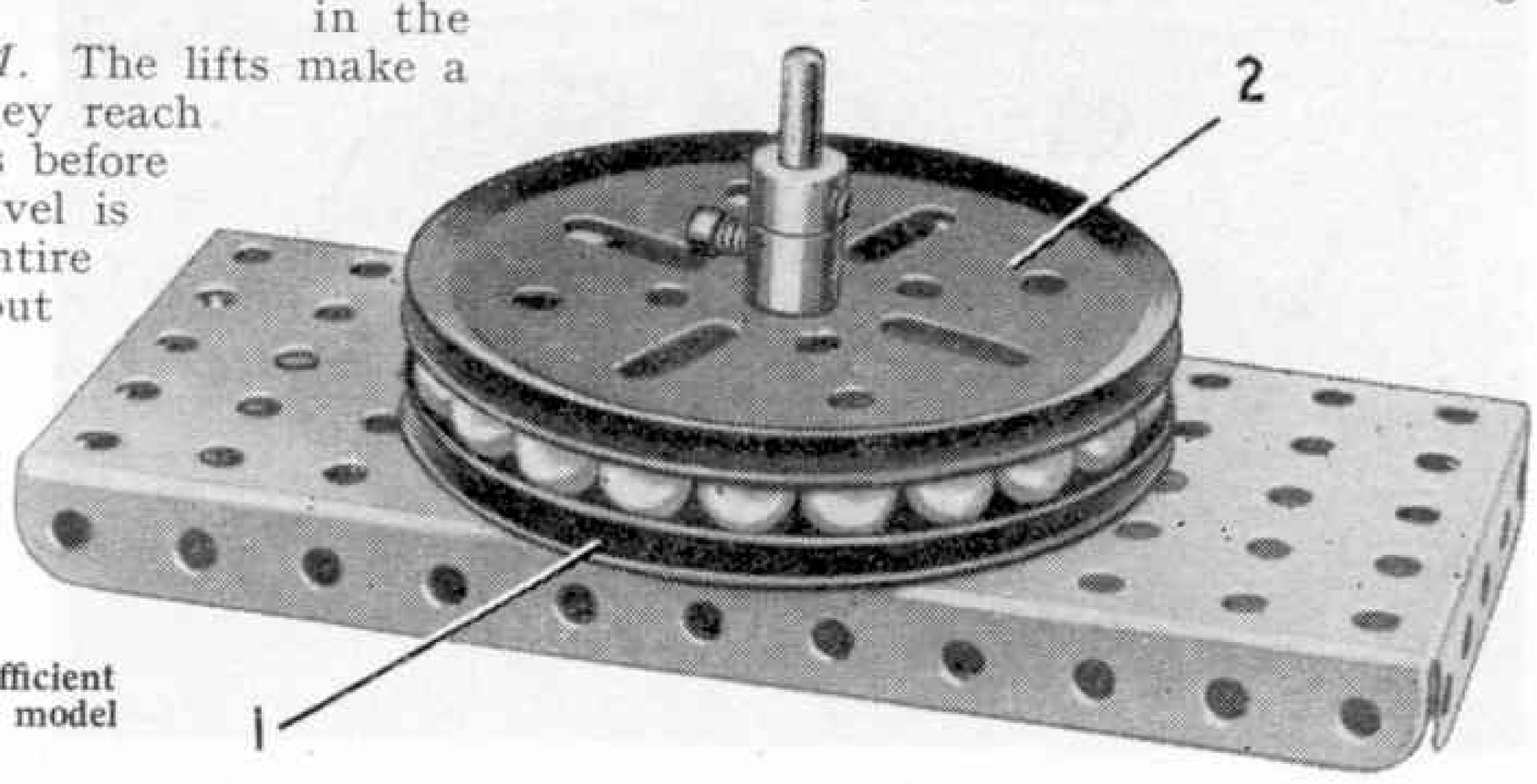


Fig. 2. A simple but efficient bearing suitable for small model cranes.

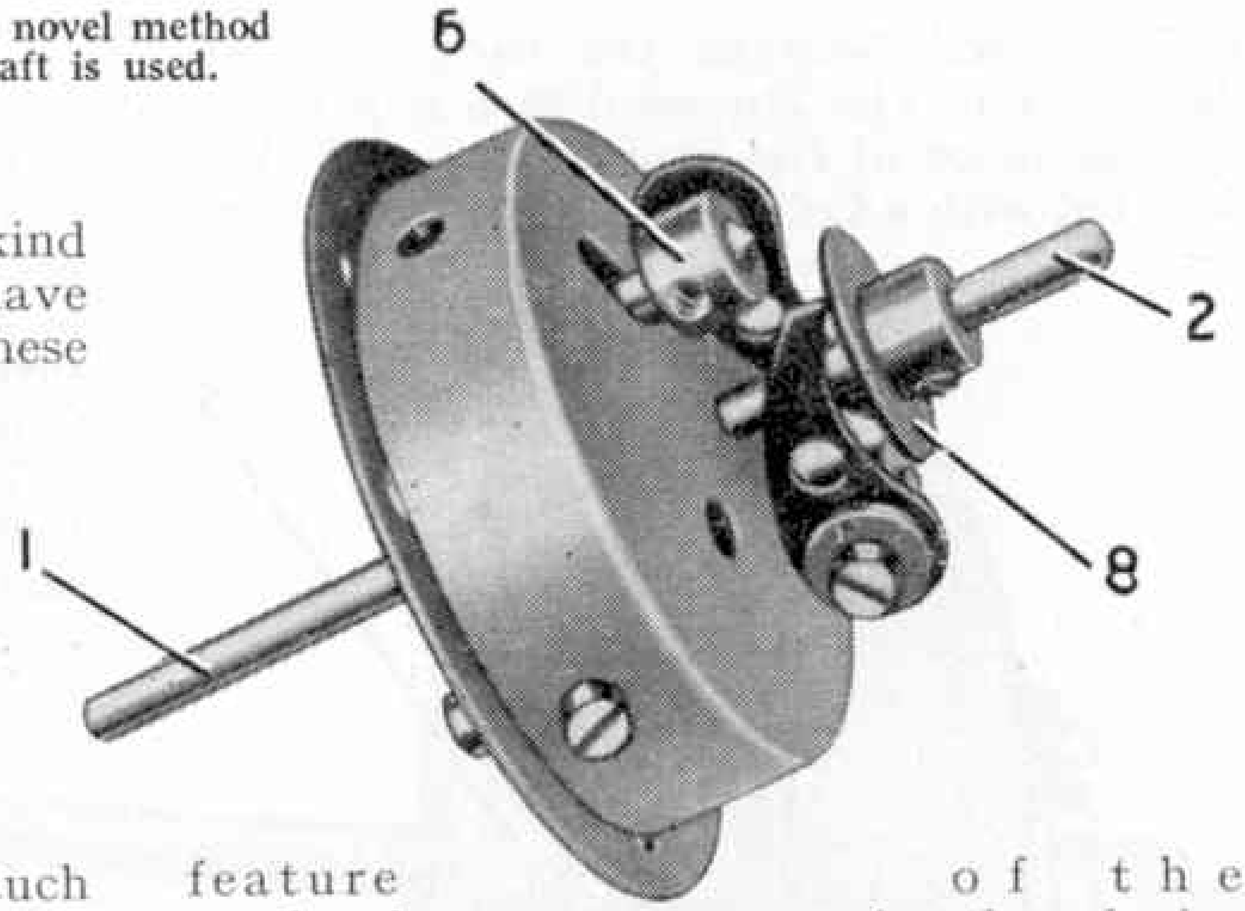


Fig. 3. A single-plate friction clutch, in which a novel method of coupling the friction plate to the driven shaft is used.

cranes. Of course, bearings of this kind can be made in many ways, and I have described many suitable methods in these pages from time to time. Most of those I have described so far, however, have been fairly large and it seems that some model-builders find difficulty in modifying them to suit small or medium sized cranes.

First I would suggest that it is not always desirable in a very small crane to have the swivelling motion motor operated. These tiny models are much more fun if the swivelling is hand operated, but even in these a good bearing that gives a smooth and stable swivelling motion, and yet provides a steady support for the superstructure, is essential. The feature of the mechanism is the device used to couple the friction plate to the driven shaft, leaving the plate free to slide on the shaft. In actual practice a splined shaft is used for this purpose, and the simple substitute fitted to the mechanism described below is probably the most compact arrangement that can be devised for Meccano clutches.

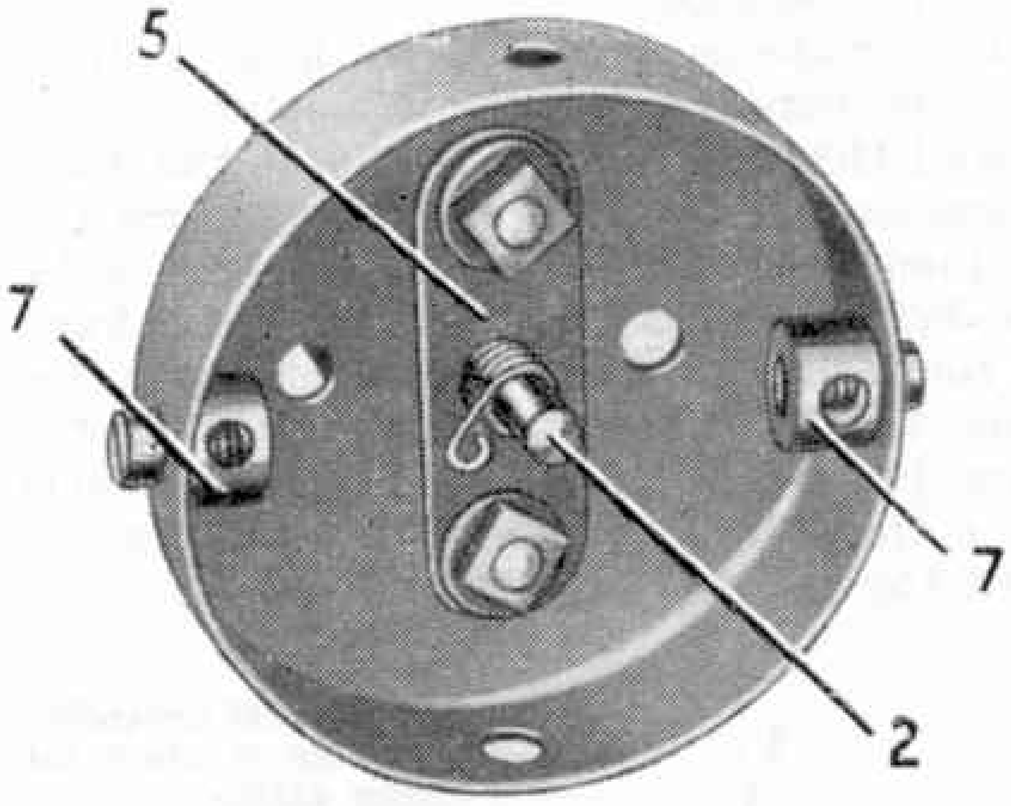
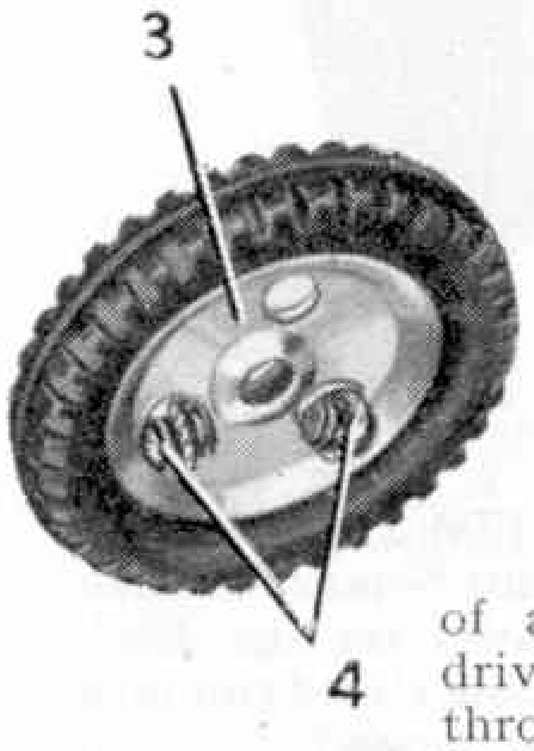


Fig. 4. The friction clutch mechanism disassembled.



bearing shown in Fig. 2 is designed specially to meet these requirements.

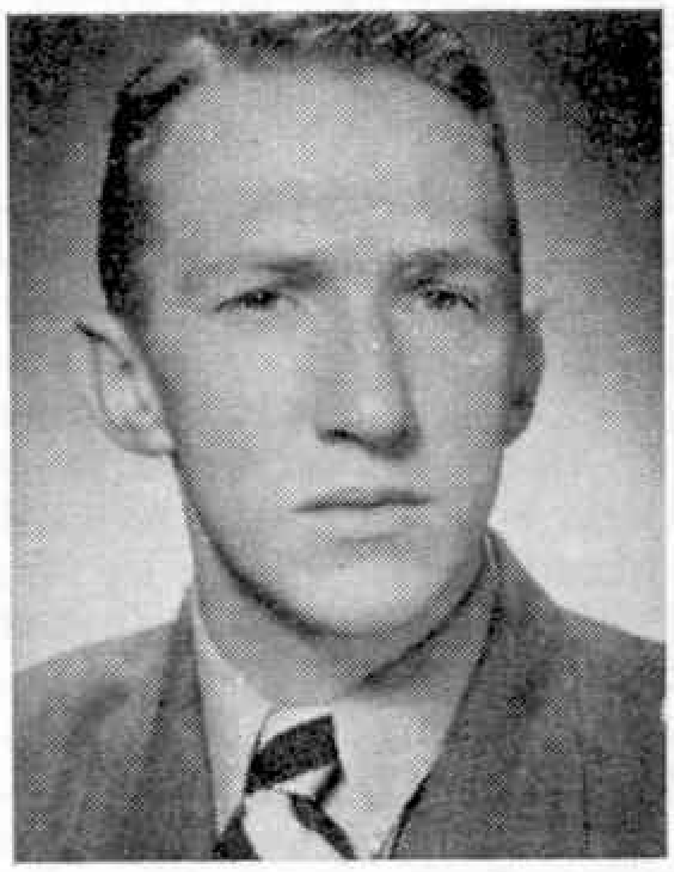
The fixed lower part of the bearing is a 3″ Pulley 1, which is bolted to the tower or chassis of the model. The bolts used to hold the Pulley in position are made use of to fix also a Wheel Flange, between which and the rim of the Pulley $\frac{3}{8}$″ Balls are placed. A Rod is gripped in the boss of the Pulley 1, and on it a second 3″ Pulley 2 is freely mounted. The Pulley 2 is used to support the cab, and is held on the Rod by a Collar.

Friction Clutch

The friction clutch shown in Figs. 3 and 4 is particularly interesting, as it follows closely the design of the single plate clutches fitted to most motor vehicles. The clutch is compact, and an unusual

The driving shaft 1 is locked in the boss of a Face Plate, and the driven shaft 2 is passed through the centre hole of a Boiler End. The friction plate 3 is a 1″ loose Pulley fitted with a Motor Tyre, and to this Pulley two 7/32″ Grub Screws 4 are attached tightly by a short piece of Cord. The Cord is looped round the Grub Screws and passed through holes in the Pulley, and its ends are then tied firmly together.

The pressure plate 5 is a $1\frac{1}{2}$″ Strip fitted with two Threaded Pins. The Strip is passed over the Rod 2 with a Compression Spring placed



Peter Oates, Mullion Creek, N.S.W., is one of the many Australians who have been successful in "M.M." Competitions.

on the Rod between the Strip and the Boiler End. The Threaded Pins slide in the slotted holes of the Boiler End, and each is fitted with a Collar 6. A Cord Anchoring

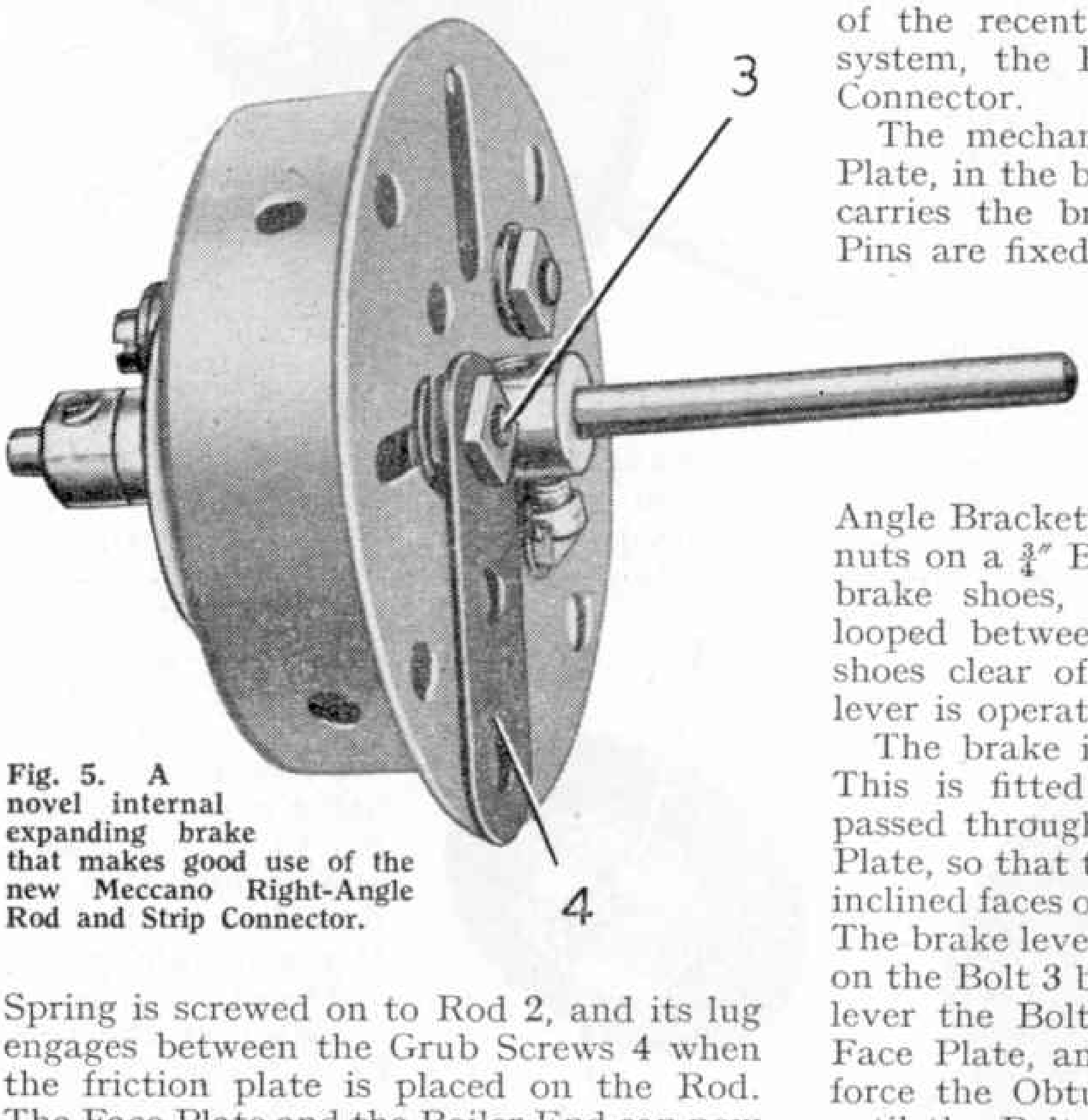


Fig. 5. A novel internal expanding brake that makes good use of the new Meccano Right-Angle Rod and Strip Connector.

Spring is screwed on to Rod 2, and its lug engages between the Grub Screws 4 when the friction plate is placed on the Rod. The Face Plate and the Boiler End can now be connected by bolts passed through slotted holes in the Face Plate and screwed into Collars 7. These Collars are fixed by their Grub Screws on $\frac{3}{8}$" Bolts in holes in the rim of the Boiler End. The Boiler End and the Face Plate must be centred carefully to ensure free running.

The pressure plate forces the friction plate against the Face Plate, and thus these parts rotate as a single unit. The lug of the Cord Anchoring Spring engages the Grub Screws 4 and ensures that the Rod 2 turns when the clutch is engaged. The release levers are Pawls without Bosses pivoted on Bolts screwed into the Collars 6 and spaced on the bolts by Washers. A $\frac{3}{4}$" Washer 8 rests against the ends of the Pawls, and a withdrawal fork should be arranged to bear against the Washer. When the Washer is depressed the Pawls move the pressure plate 5 against the Compression Spring and thus allow the friction plate to move away from the Face Plate to disengage the drive.

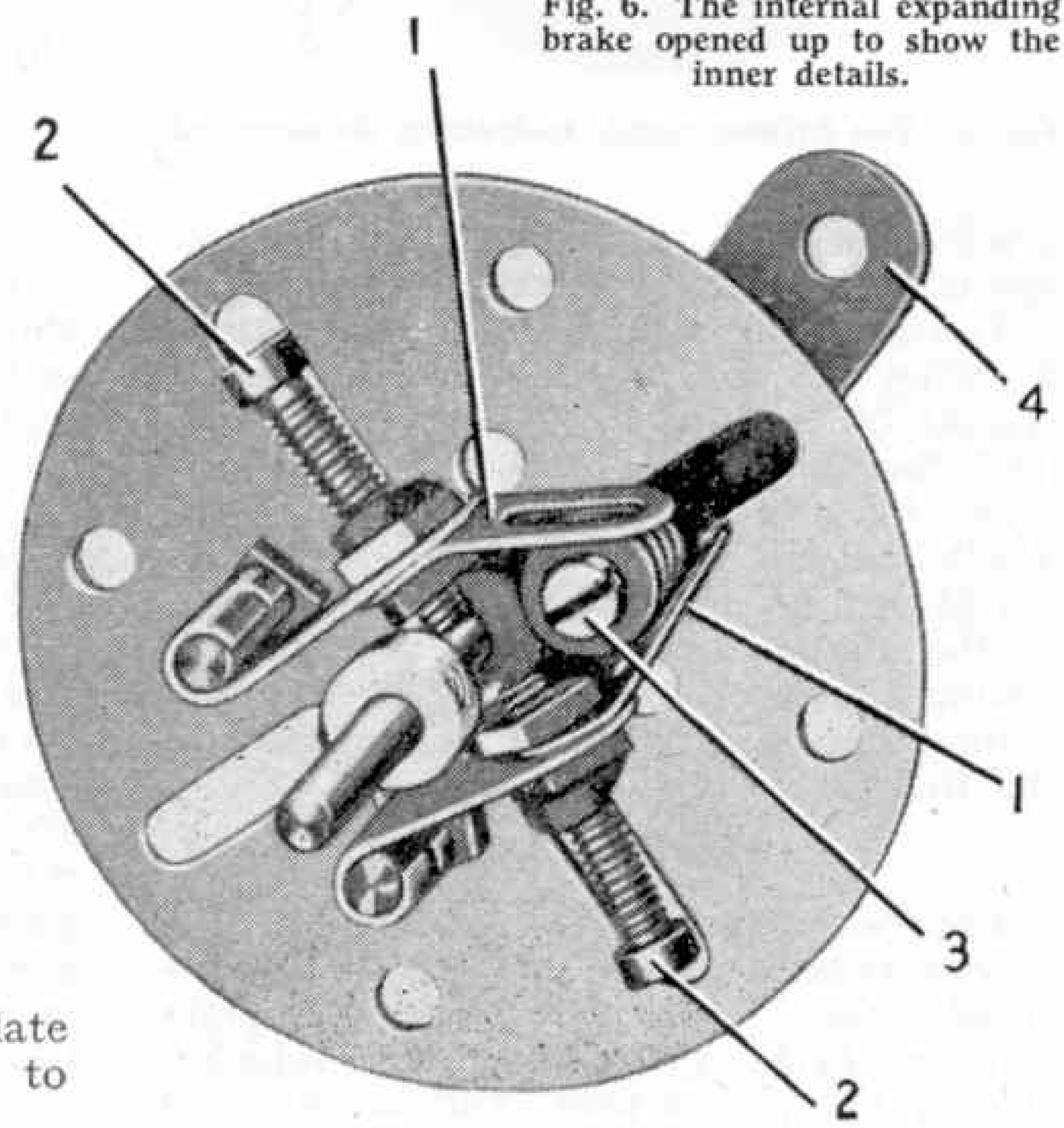
Internal Expanding Brake

The brake shown in Figs. 5 and 6 provides a powerful retarding force, and is notable for the novel use it makes of one of the recent additions to the Meccano system, the Right-Angle Rod and Strip Connector.

The mechanism is mounted on a Face Plate, in the boss of which is the Rod that carries the brake drum. Two Threaded Pins are fixed in the Face Plate, and on each of these a Right-Angle Rod and Strip Connector is placed. The Right-Angle Rod and Strip Connectors are each extended by an Obtuse Angle Bracket 1, which is attached by two nuts on a $\frac{3}{4}$" Bolt 2. These Bolts form the brake shoes, and a $2\frac{1}{2}$" Driving Band looped between them serves to keep the shoes clear of the drum until the brake lever is operated.

The brake is actuated by a $\frac{1}{2}$" Bolt 3. This is fitted with six Washers and is passed through a slotted hole of the Face Plate, so that the Washers bear against the inclined faces of the Obtuse Angle Brackets. The brake lever is a $1\frac{1}{2}$" Strip 4 that is fixed on the Bolt 3 by two nuts. By moving this lever the Bolt 3 is made to slide in the Face Plate, and in doing so the Washers force the Obtuse Angle Brackets 1 apart until the Bolts 2 engage the drum.

Fig. 6. The internal expanding brake opened up to show the inner details.



The Jones KL66 Mobile Crane Contest

Have You Sent in Your Entry?

ONE of the most important model-building competitions we have organised for some time is still open for entries. This is the Jones KL66 Mobile Crane Contest, details of which are given in the November and December, 1954, issues of the *M.M.* As you will see in the panel on this page, many valuable cash prizes are waiting to be won in this Contest, and if you want to be one of the lucky recipients of these you must prepare and send in your entry as soon as possible.

Entries will be received up to 28th February, and the Competition is open to model-builders of all ages, living in any part of the world. All you have to do is to build as good a model as you can of the Jones KL66 Mobile Crane, an illustration of which appears on this page. You must then obtain either a photograph or a good sketch of your model and send this, together with a brief description of its principal features to *Jones KL66 Crane Competition, Meccano Ltd., Binns Road, Liverpool 13.*

Full details and illustrations of the KL66 Crane appeared in the November issue of the *M.M.* but in case that issue is not available to you, the following brief summary of its main features will prove helpful in conjunction with the illustration on this page.

The Crane is driven by a diesel engine that provides power for travelling, load hoisting, slewing of the jib and superstructure and derricking or luffing of the jib. From the engine the drive is taken through a clutch to a 3-speed gear-box, the output shaft of which is connected by a flexible coupling to a main drive transmission unit. From this, separate drives are taken by flexible couplings to the jib derricking drum and to the load hoisting drum. Separate clutches and brakes are provided for each of these drums.

The transmission unit provides also two other drives, one to the crane undercarriage wheels and the other for slewing the jib and superstructure.

THE PRIZES

The following Cash Prizes will be awarded in Sections A and B of this important Competition.

Section A (for competitors under 15 years of age on 28th February 1955).

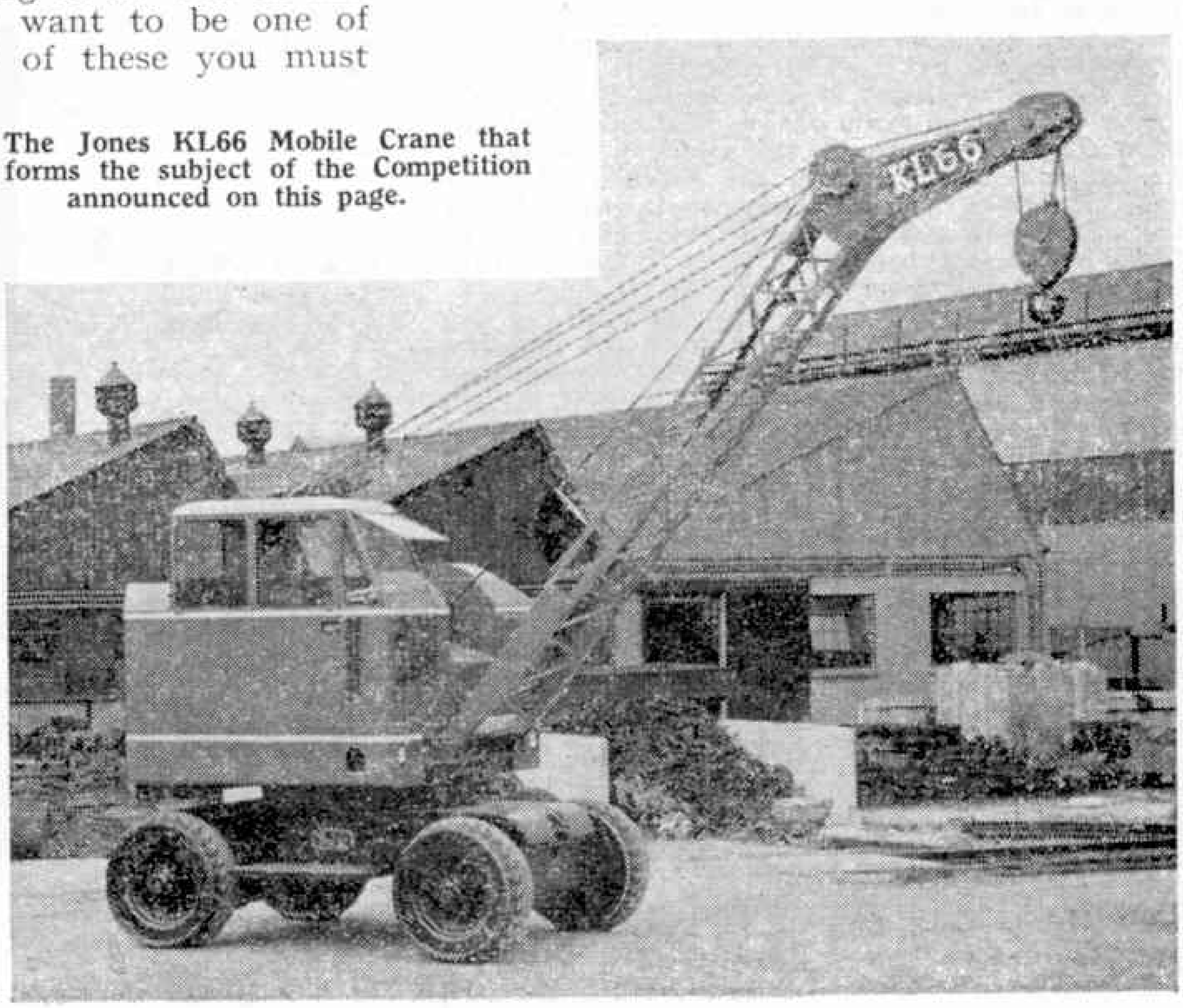
	£	s.	d.
First Prize, Cheque for	10	0	0
Second Prize, Cheque for	5	0	0
Third Prize, Cheque for	3	0	0
Fifteen Prizes, each of a Cheque for	1	0	0
Fifteen Prizes, each of	0	10	0

Section B (for competitors over 15 years of age on 28th February 1955).

	£	s.	d.
First Prize, Cheque for	15	0	0
Second Prize, Cheque for	8	0	0
Third Prize, Cheque for	5	0	0
Fifteen Prizes, each of a Cheque for	1	10	0
Ten Prizes, each of a Cheque for ..	1	0	0

(Offered by George Cohen Sons and Company Ltd. and Meccano Ltd., jointly).

The Jones KL66 Mobile Crane that forms the subject of the Competition announced on this page.



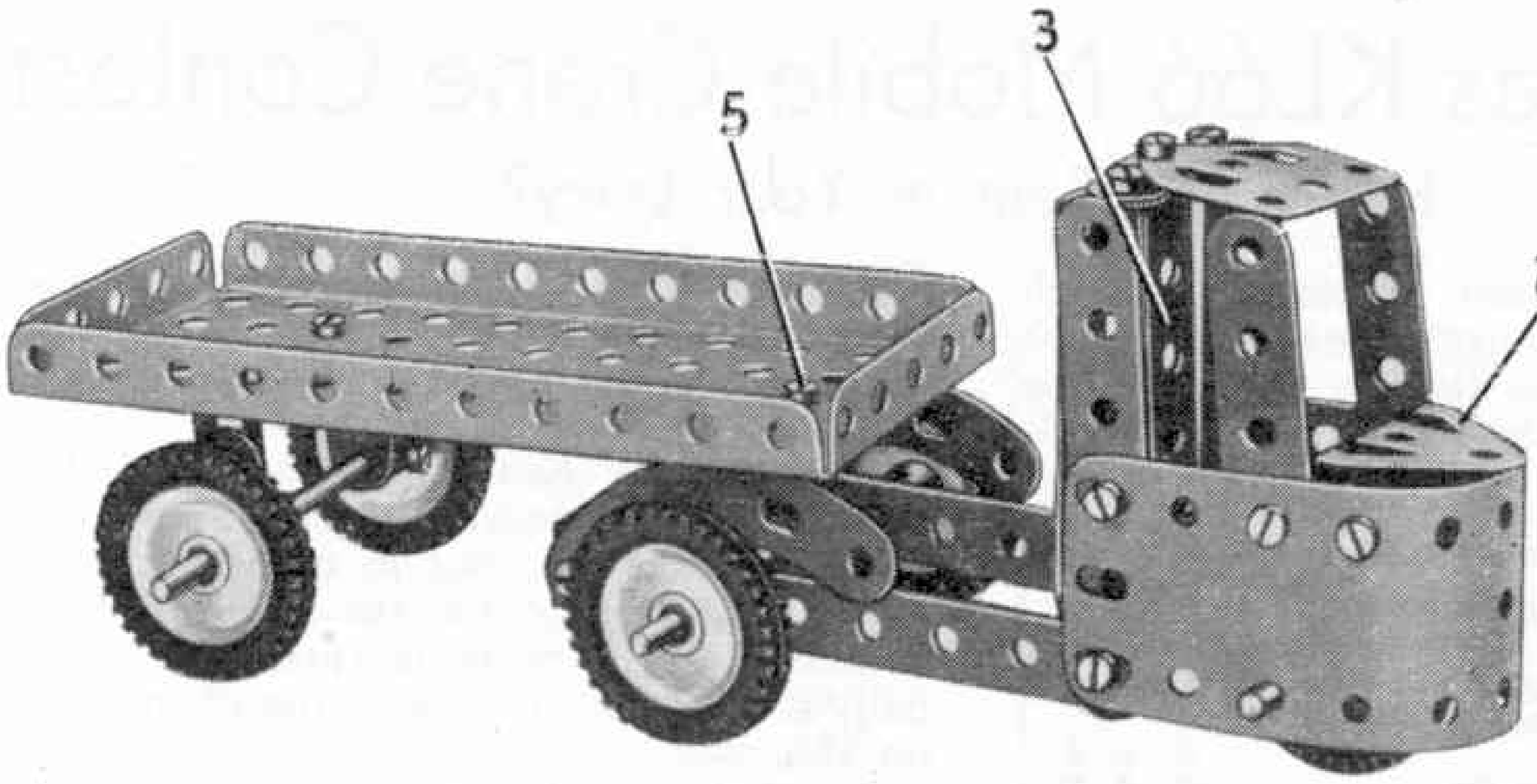


Fig. 1. A Mechanical Horse and Trailer that can be built with parts in Outfit No. 1.

New Meccano Models

Mechanical Horse and Trailer—Cargo Steamer

A SIMPLE Mechanical Horse and Trailer suitable for very young model-builders is the first of two new models described this month. It is designed for Outfit No. 1 and is shown in Figs. 1 and 2.

You should make the tractor unit of the model first. Begin by bolting an Angle Bracket to one end of each of two $5\frac{1}{2}$" Strips, and then connect the Angle Brackets by attaching to them a Trunnion 1. Now use the bolts that fix the Angle Brackets to the Strips to secure also $2\frac{1}{2}$" Stepped Curved Strips on each side, and this assembly will then form the chassis of the tractor. For the rear wheels use 1" Pulleys and fit them with Motor Tyres. Fix the Pulleys on a $3\frac{1}{2}$" Rod mounted in the chassis as shown in the illustrations.

To form the sides and front of the tractor body you will need a $5\frac{1}{2}" \times 1\frac{1}{2}"$ Flexible Plate. Curve this to U-shape, and then bolt it to the $5\frac{1}{2}$" Strips of the chassis so that on each side it overlaps the chassis by four holes. The top of the bonnet is covered by a Trunnion 2 attached to the Flexible Plate by Angle Brackets. Place a Bush Wheel, which forms the front wheel, freely on a 2" Rod, and pass the Rod through holes in the Strips and the Flexible Plate. Hold the Rod in place by Spring Clips.

Now assemble the back of the cab by fixing two $2\frac{1}{2}" \times \frac{1}{2}"$ Double Angle Strips 3 to Angle Brackets bolted to the chassis. Attach a Flat Trunnion to the Double Angle Strips as shown in Fig. 2, and at their upper ends connect them together by two Fishplates 4. These Fishplates are also used to support another Flat Trunnion that forms the cab roof. Complete the cab by bolting two $2\frac{1}{2}$" Strips to each side to make the window and windscreen frames.

For the trailer use a $5\frac{1}{2}" \times 2\frac{1}{2}"$ Flanged Plate. Its wheels are 1" Pulleys and they should be fixed on a $3\frac{1}{2}$" Rod. Support the Rod in two Fishplates, each attached to an Angle Bracket bolted underneath the Flanged Plate

In order to attach the tractor to the trailer a coupling is needed and this is formed by a $\frac{3}{8}$" Bolt in the trailer engaging a hole in a $\frac{1}{2}$" Reversed Angle Bracket bolted to the tractor. You can see this $\frac{3}{8}$" Bolt marked 5, and the Reversed Angle Bracket is attached to the Trunnion 1 as shown in Fig. 2.

The complete list of the parts you will require to build the Mechanical Horse and Trailer is as follows: 2 of No. 2; 4 of No. 5; 4 of No. 10; 8 of No. 12; 2 of No. 16; 1 of No. 17; 4 of No. 22; 1 of No. 24; 4 of No. 35; 27 of No. 37a; 24 of No. 37b; 3 of No. 38; 2 of No. 48a; 1 of No. 52; 2 of No. 90a; 3 of No. 111c; 1 of No. 125; 2 of No. 126; 2 of No. 126a; 4 of No. 142c; 1 of No. 189.

Our next model is intended for rather more advanced model-builders, and is a fine Cargo Steamer built with the parts in Outfit No. 3.

You will notice that this model makes effective use of new parts now included in a No. 3 Outfit. The tapering fore-deck of a Meccano ship, particularly a fairly small model such as the one described here, was formerly rather difficult to fill in neatly. The Triangular Flexible Plates now available are designed specially for this type of work, and in the Cargo Steamer four $2\frac{1}{2}" \times 1\frac{1}{2}"$ Triangular Flexible Plates fill in the fore-deck neatly and conveniently.

Construction of the model is begun by bolting a $12\frac{1}{2}$" Strip 1 on each side to the long flange of a $5\frac{1}{2}" \times 2\frac{1}{2}"$ Flanged Plate. At the bow a $5\frac{1}{2}" \times 1\frac{1}{2}"$ Flexible Plate is fixed to each of the Strips 1, and these Plates and the Strips are then connected by a $\frac{3}{8}$" Bolt 3. The sides of the hull on

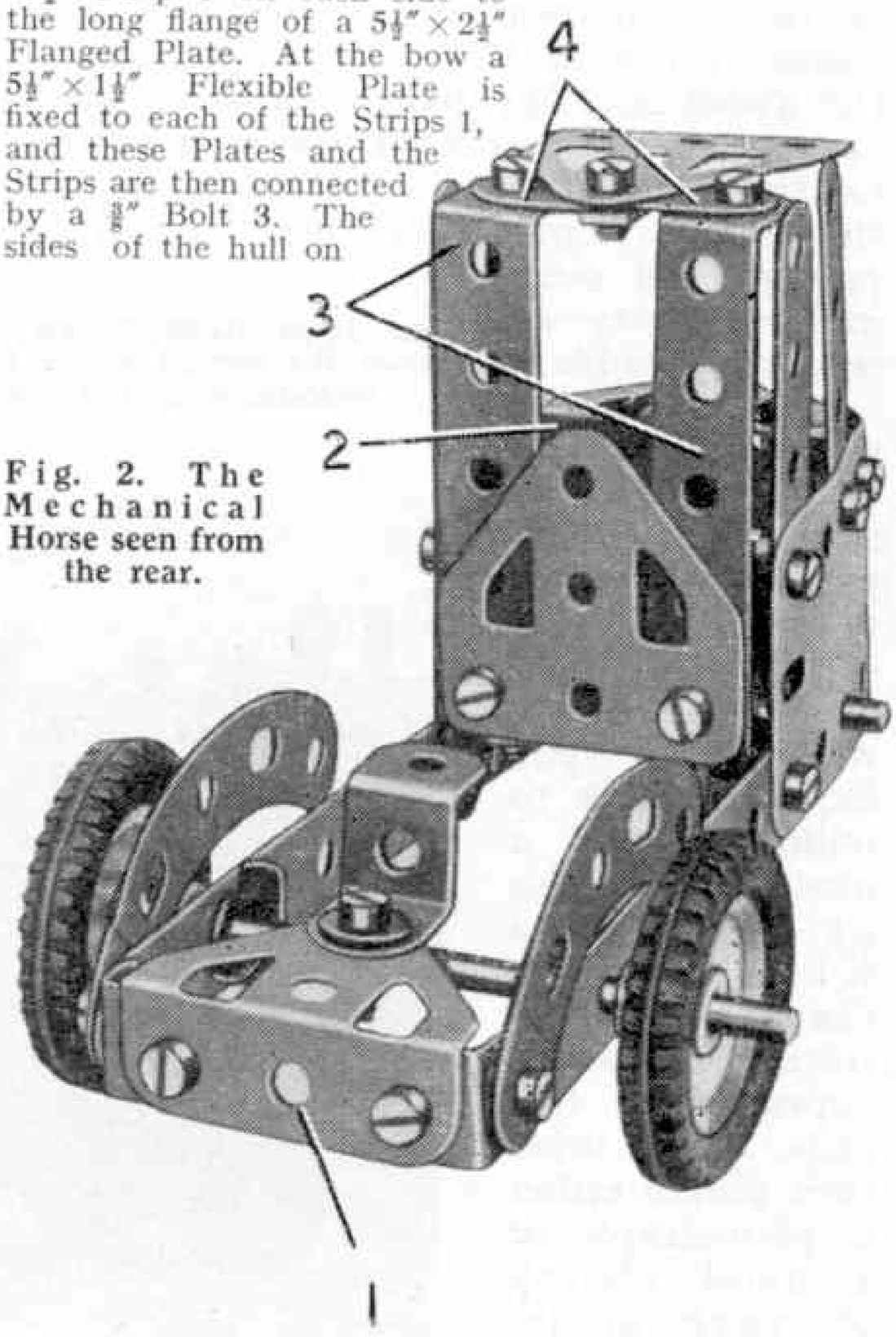
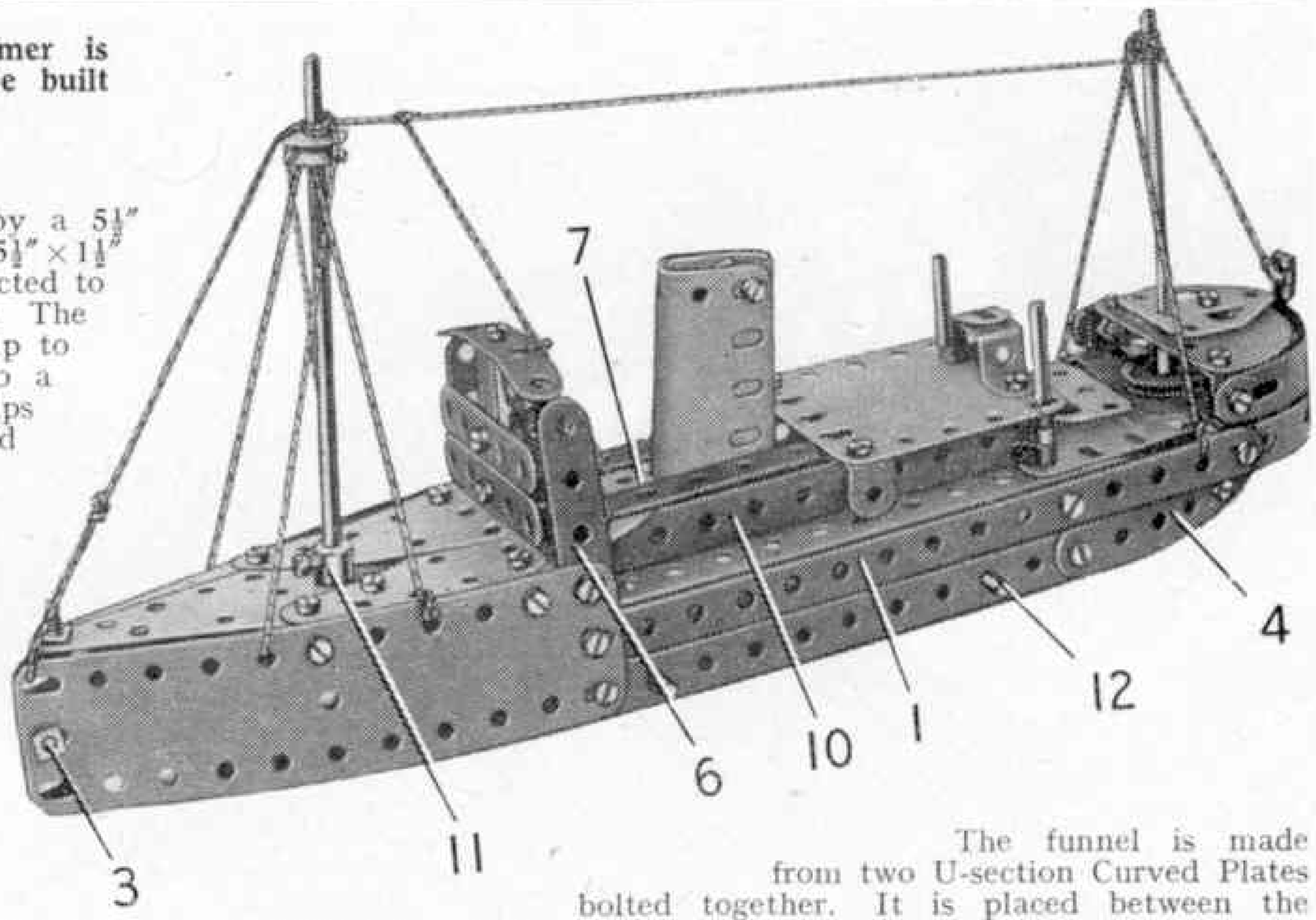


Fig. 2. The Mechanical Horse seen from the rear.

Fig. 3. This Cargo Steamer is designed so that it can be built with parts in Outfit No. 3.



each side are completed by a 5½" Strip. This is bolted to the 5½" × 1½" Flexible Plate and is connected to the Strip 1 by a Fishplate. The bolt that joins the 5½" Strip to the Fishplate supports also a 2½" Strip 4, and these Strips on each side are curved inward slightly and are extended towards the stern by 2½" Stepped Curved Strips.

A 2½" × ½" Double Angle Strip is bolted between the ends of the Strips 1, and these bolts serve also to secure two Formed Slotted Strips and Fishplates. Two further Formed Slotted Strips are fixed to the top ends of the Fishplates as shown (Fig. 4) and the Formed Slotted Strips are then bolted together in pairs to form the rounded stern. The deck in the stern is plated by a Semi-Circular Plate 5, which is attached to Angle Brackets. The Flanged Plate is extended towards the stern by a 2½" × 2½" Flexible Plate, to which a Flat Trunnion is attached by a ⅜" Bolt. The Flat Trunnion is spaced from the deck by two nuts on the Bolt.

On each side a vertical 2½" Strip 6 is bolted to the hull, and to them a Semi-Circular Plate 7 is connected by Angle Brackets. Two 5½" Strips 8 are bolted to the Semi-Circular Plate and their stern ends are fixed to Double Brackets attached to the Flanged Plate. A 2½" × 2½" Flexible Plate, fitted as shown with two ½" Reversed Angle Brackets and a 2½" × ½" Double Angle Strip, is bolted to the Strips 8. Two 2" Rods are passed through the Flexible Plate and the Flanged Plate, and each is held in place by two Spring Clips.

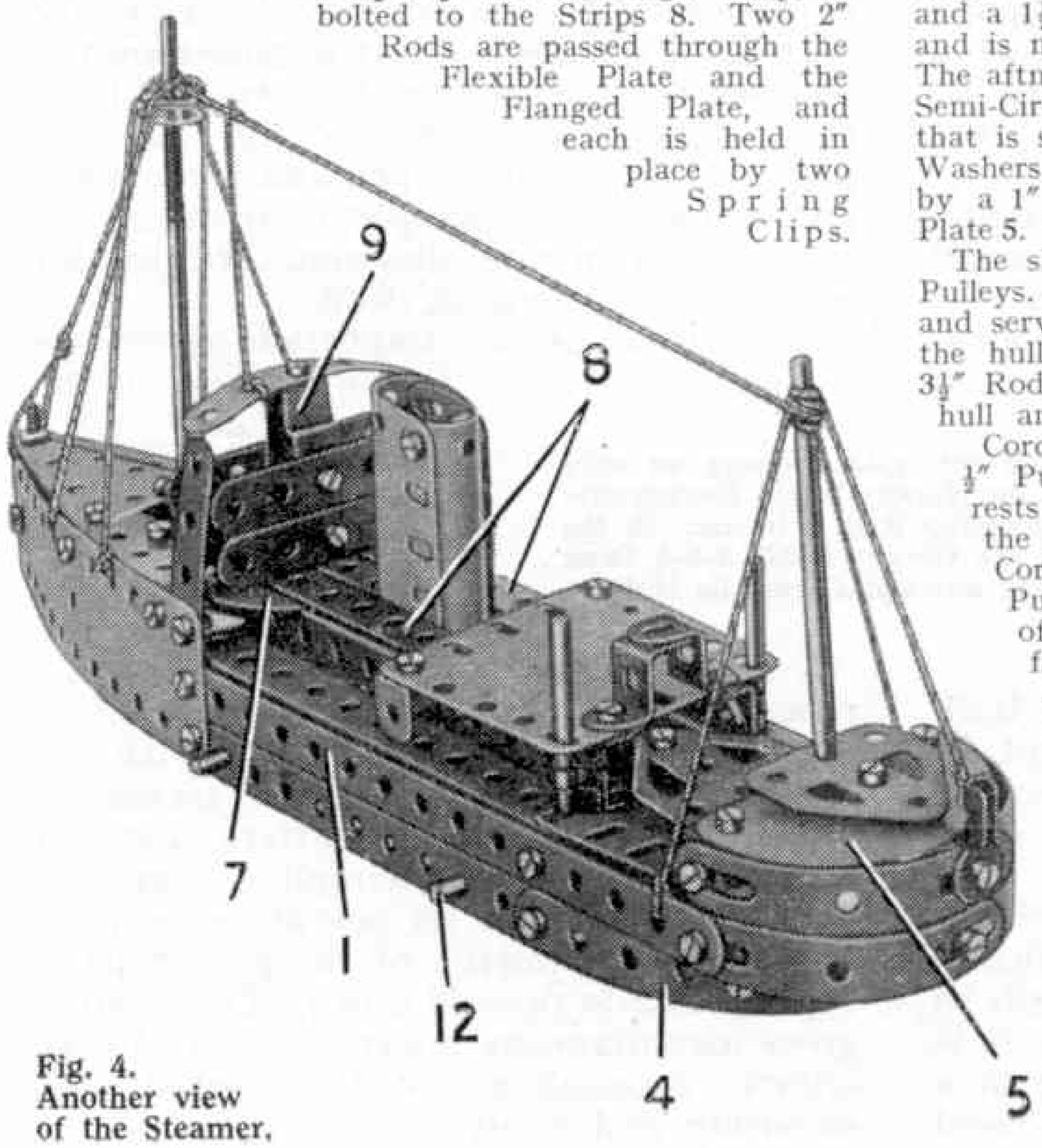


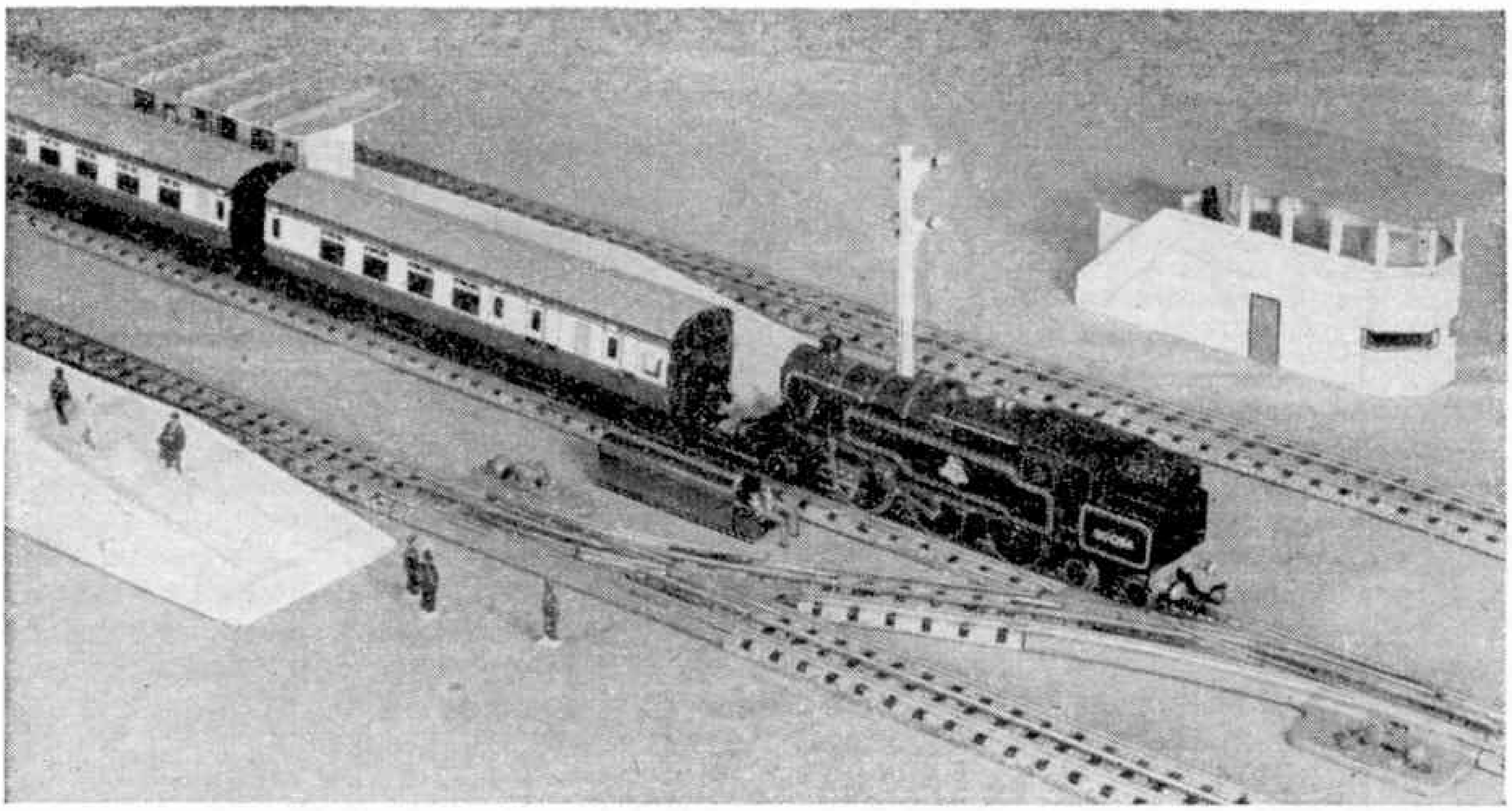
Fig. 4. Another view of the Steamer.

The funnel is made from two U-section Curved Plates bolted together. It is placed between the Strips 8 and is attached to the Flanged Plate by an Angle Bracket. The bridge consists of two Trunnions, the flanges of which overlap and are bolted to the Semi-Circular Plate 7. Two 2½" Strips are fixed to each Trunnion, and the bolts that secure the top pair of Strips are used also to fix in position a Stepped Bent Strip 9. A 2½" Strip is curved slightly and is bolted to the Stepped Bent Strip to form the top of the bridge. A 5½" Strip 10 on each side is fixed to the Double Bracket that supports one of the Strips 8 to complete the superstructure of the model.

The fore-deck is made from four 2½" × 1½" Triangular Flexible Plates bolted together as shown, with a Bush Wheel 11 fixed between them. The deck is connected to the 5½" × 1½" Flexible Plates by three Angle Brackets. The fore-mast is made from a 4" and a 1½" Rod joined together by a Rod Connector, and is mounted in the boss of the Bush Wheel 11. The aftmast is a 4" Rod and it is passed through the Semi-Circular Plate 5 and through a Flat Trunnion that is spaced from the Semi-Circular Plate by five Washers on a ⅜" Bolt. The Rod is held in position by a 1" Pulley placed underneath the Semi-Circular Plate 5.

The ship is fitted with wheels formed by three 1" Pulleys. Two of these are fixed on a 3½" Rod 12 and serve to hold the Rod in place in the sides of the hull. The third wheel is mounted on another 3½" Rod, which also is supported in the sides of the hull and which is held in place by Spring Clips. Cord is used to represent the rigging, etc. A ½" Pulley is placed on the fore-mast so that it rests on the Rod Connector that is used to join the 4" and the 1½" Rod. The fore-mast rigging Cords are looped round the Rod above the Pulley and their ends are tied to the sides of the hull. The aftmast rigging Cords are fastened tightly to the top of the Rod and are tied to the Strips 1 and to a Rod and Strip Connector at the stern.

Parts required to build the Cargo Steamer: 2 of No. 1; 6 of No. 2; 9 of No. 5; 4 of No. 10; 2 of No. 11; 8 of No. 12; 2 of No. 15b; 2 of No. 16; 2 of No. 17; 1 of No. 18a; 4 of No. 22; 1 of No. 23; 1 of No. 24; 6 of No. 35; 56 of No. 37a; 50 of No. 37b; 10 of No. 38; 1 of No. 40; 1 of No. 44; 2 of No. 48a; 1 of No. 52; 2 of No. 90a; 4 of No. 111c; 2 of No. 125; 2 of No. 126; 2 of No. 126a; 2 of No. 189; 2 of No. 190; 2 of No. 199; 1 of No. 212; 1 of No. 213; 2 of No. 214; 4 of No. 215; 4 of No. 221.



HORNBY RAILWAY COMPANY

By the Secretary

Electric Uncoupling in Hornby-Dublo

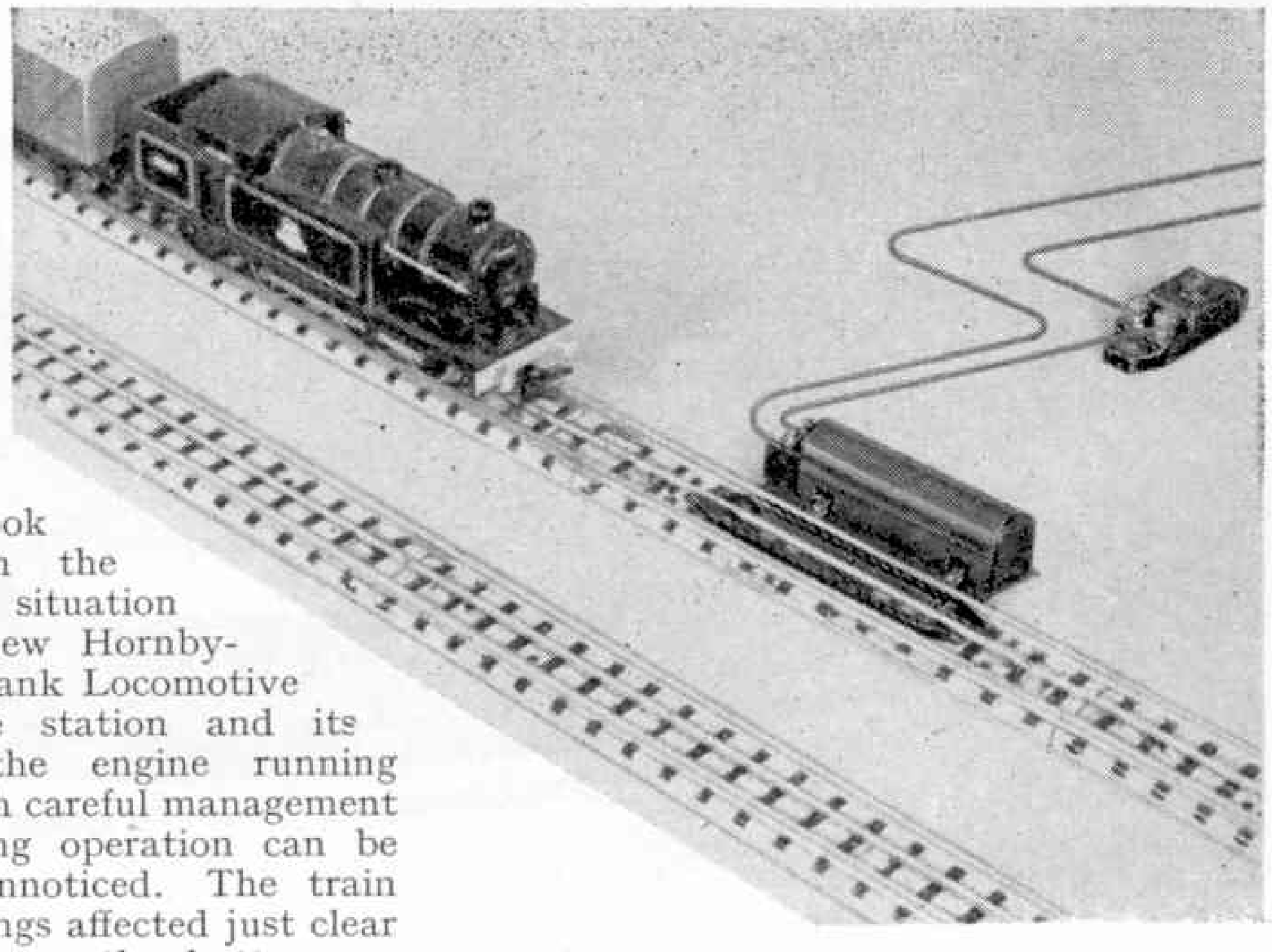
I HAVE remarked before that I always enjoy talking about new things for Hornby-Dublo or Hornby Railways, and this month I am giving myself the pleasure of saying something about the Hornby-Dublo Electrically Operated Uncoupling Rail. I hope you too will find this a pleasure, or at least of some help to you in deciding how to make the best use of this.

The hand-operated UBR Uncoupling Rail, which has been a familiar feature of Hornby-Dublo railways ever since the adoption of the present type of coupling, is a well tried and popular piece of miniature railway equipment. The Electrically-Operated version, EUBR, a natural development from it, is just as effective as the original Uncoupling Rail, and has the great advantage that it provides a final link in the system of remote control that can be applied on a Dublo layout.

As in the case of the hand-operated UBR Uncoupling Rail, the new Electrically Operated component is equal in length to the standard Straight Half Rail, so it is quite easy to allow for its inclusion in a layout. The electrical apparatus is housed in a neat casing at the side of the track. At one end of this are the two terminals for the attachment of the connecting wires, one of which comes from the operating Switch, the other from the Transformer or power supply unit employed. A further wire from the Switch to the power supply completes the circuit, as you will see from the upper illustration on the opposite page. This is quite simple, and you cannot go wrong, as complete instructions, including a wiring diagram, are packed with each Uncoupling Rail.

Running round the train becomes an easy matter when the Hornby-Dublo Electrically-Operated Uncoupling Rail is in use. In the picture above the Hornby-Dublo 2-6-4 Tank has just been uncoupled from its train.

Now there is one important difference in the working of the ramp of the Electrically-Operated Rail as compared with that of the hand operated UBR. The latter is set by the hand lever and remains in the raised or operating position until the lever is moved again. With the Electrically-Operated Rail the technique is slightly different. Matters are so arranged that the uncoupling ramp is only maintained in its operating position as long as the button of the press-button type Switch is pressed down. This system gives instantaneous finger-tip control that allows uncoupling to be carried out smoothly and easily.

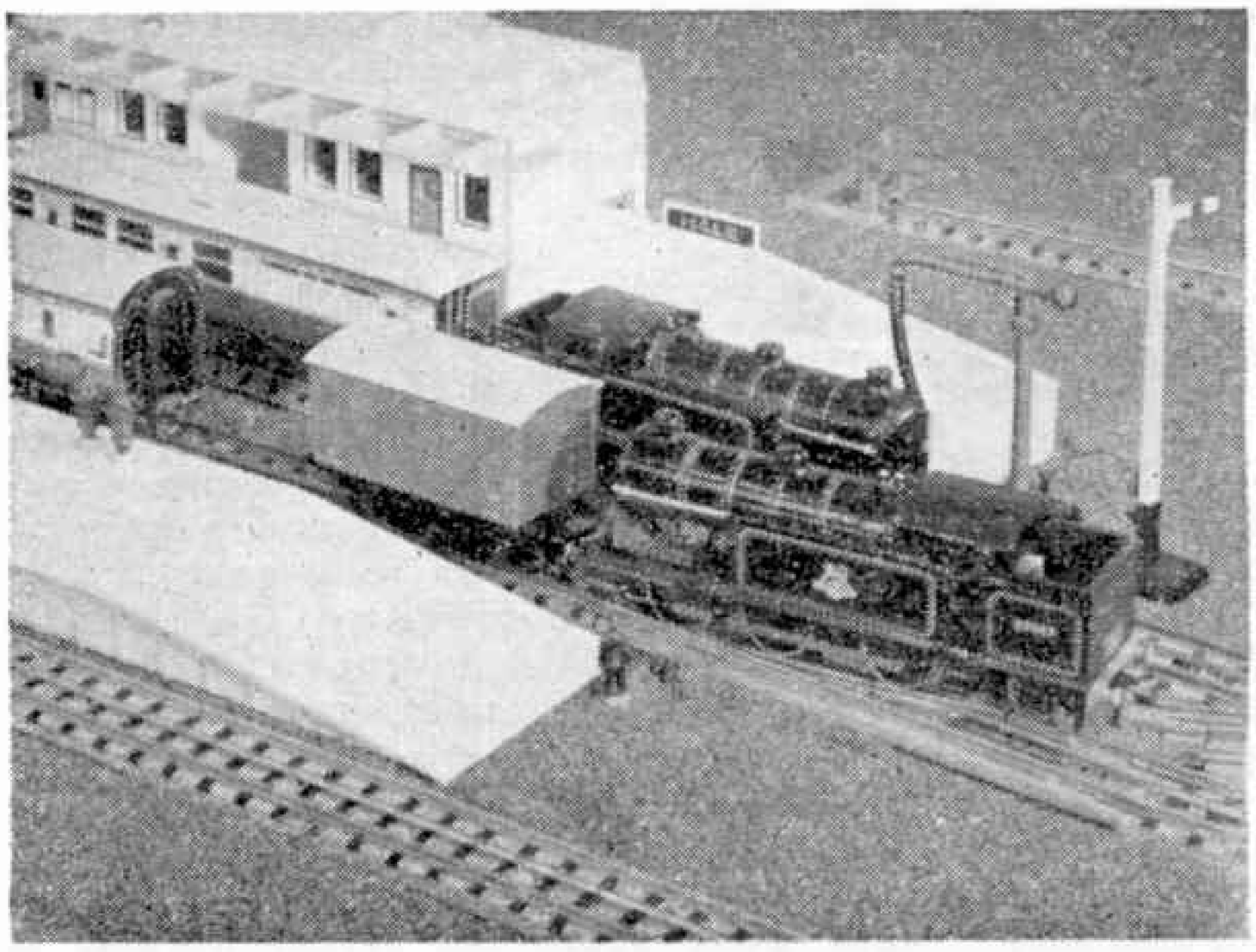


The Electrically-Operated Uncoupling Rail and its special Switch are clearly shown in the picture.

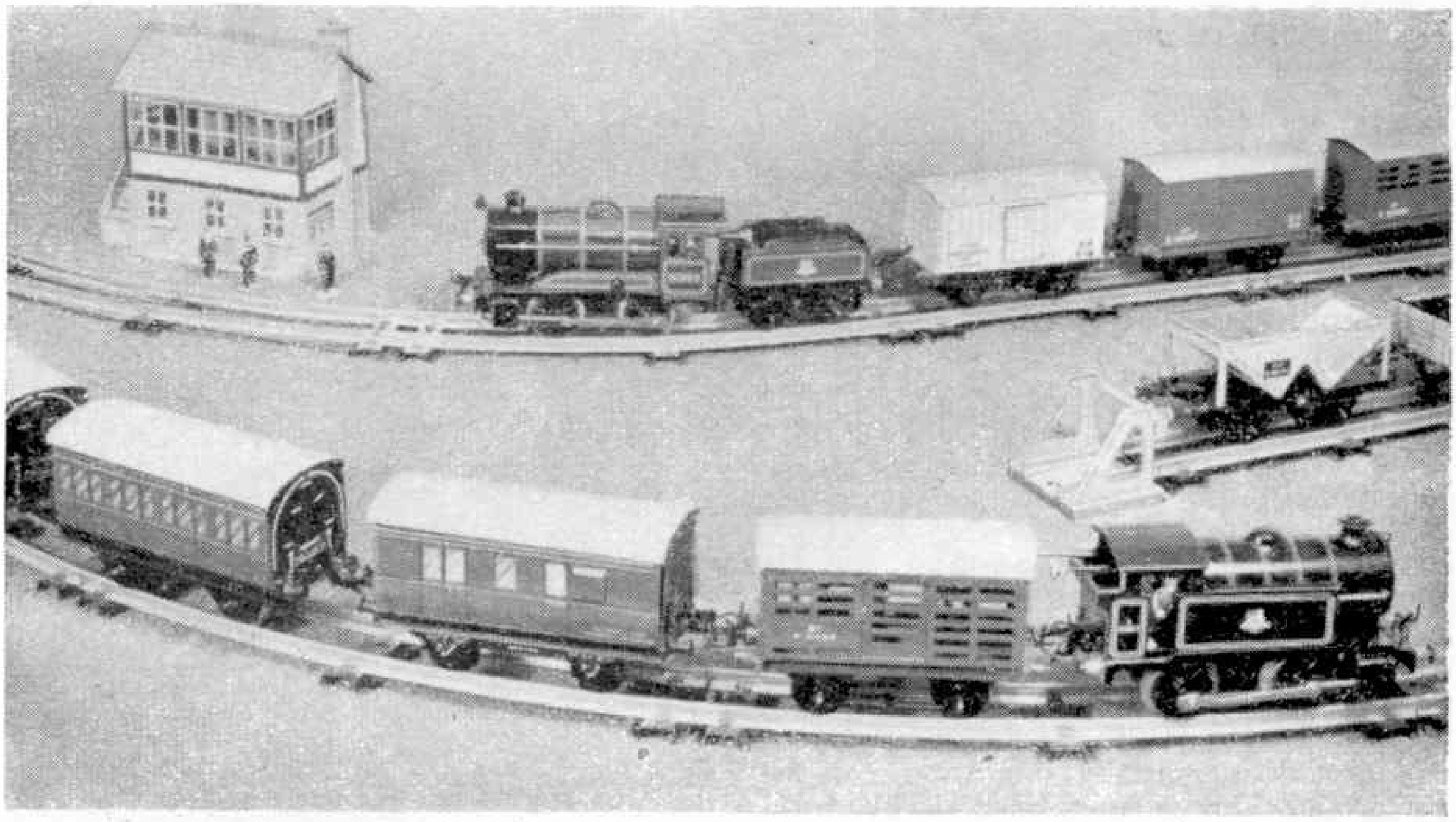
What about the use of the Uncoupling Rail in practice? The remote control feature opens up some really interesting possibilities. Look at the picture on the opposite page. The situation there is that the new Hornby-Dublo B.R. 2–6–4 Tank Locomotive has arrived at the station and its working involves the engine running round the train. With careful management the actual uncoupling operation can be performed almost unnoticed. The train stops with the couplings affected just clear of the ramp. We press the button, up pops the ramp, and then the engine pushes back on the train far enough to disengage the couplings. The button is now released, so the ramp drops and at the same time we can draw the engine away from the train. If properly carried out this operation can be most attractive to the onlooker and very satisfying to the operator.

A train arriving at the station may require to detach a vehicle or vehicles, and this can readily be done without the need for the operator being anywhere near the train at all. The coach or van can be removed from either end of the train by suitable shunting movements using the train engine.

These are only two of the many fascinating station operations that we see in real life that we are able to reproduce in Hornby-Dublo. For example, there is the attachment of an additional vehicle to a standing train by the station pilot or shunting engine, as shown in the lower illustration on this page. In order to carry out this properly a few trial moves may have to be made. The train engine of course must come to a stand in a section that can be isolated, but there must still be sufficient length of track at the rear end of the train for the shunting engine to operate. The exact placing is of importance, because the shunting engine must be able to give the vehicle to be attached just sufficient push on uncoupling to allow it to reach the train and the couplings to engage almost at the same time. The careful timing called for in little jobs such as this makes them all the more interesting to the real enthusiast.



The station pilot pushes a van over the Uncoupling Rail so that the van is separated from the engine—and then is attached to the rear of the waiting train.



Fun with Your Trains

Hints for Enthusiasts New and Old

THIS is the time of the year when many of you are getting down to the business of train running for the first time. Others of course are trying out additions to Train Sets already in use, working on fresh layouts, running new locomotives or putting more varied train services into operation. Whatever you are doing, it is certain that everyone concerned will be having plenty of fun.

The beginner soon gets used to handling a Clockwork locomotive and such an engine, properly looked after, will last for a very long time. This is not the place to go into the details of maintenance in general, but if an engine is kept clean and is oiled from time to time, it is very unlikely to go wrong, and much the same thing applies to the rolling stock. Hornby vehicles run easily and quietly on their plastic wheels. Just the slightest drop of oil on the axle bearings is needed to keep them in first-class running condition.

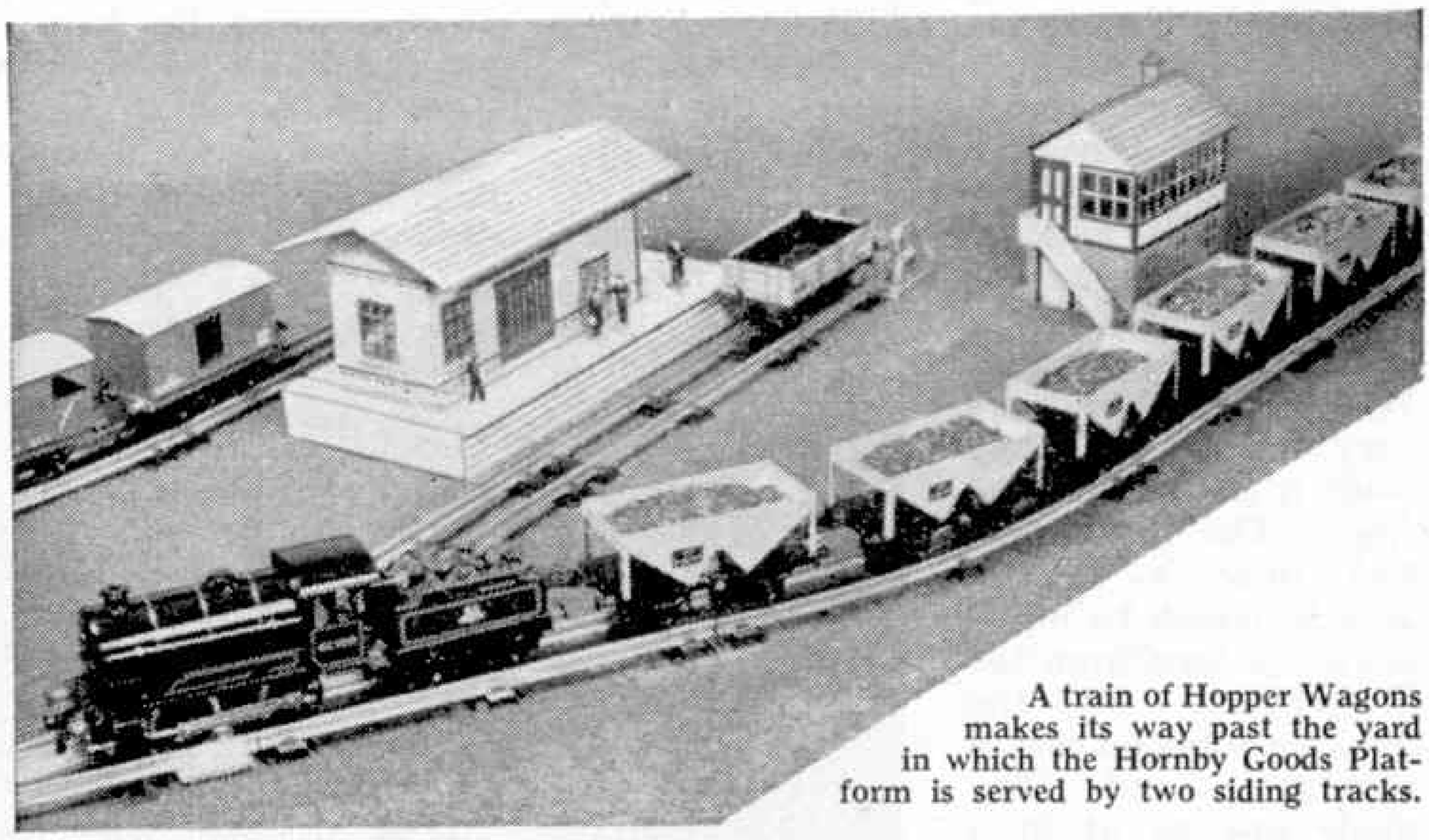
To get most fun out of the business of train running one has to be a good driver—yes, even clockwork engines, simple as they are, need to be handled sympathetically, and to become a good driver, the first step is to "learn" your engines. All Hornby Clockwork Locomotives can be braked from the cab, or from the track by means of a suitable Brake Rail. Of course the job is easy with a little engine like the Hornby MO, which has simply a brake lever for the driver to manage, apart from the business of winding up, but there is nothing very difficult in controlling the larger M1 Locomotive and the No. 40 Tank, which have reversing as well as brake gear, so that they can be made to run either forward or backward as required. On these two engines reversing can only be effected by movement of the reversing levers in the engine cabs and after a little practice even the beginner can readily tell when the reversing lever is fully home in fore or back gear.

The Milk Van runs empty at the front end of the passenger train shown above. In the background a fast goods is passing the Signal Cabin.

The largest Hornby Clockwork Locomotives of the present time, the Nos. 50 and 51 Locomotives, have the special advantage that their mechanism can be reversed by means of the BBR Brake Rail, which is included in Nos. 50 and 51 Train Sets, as well as by hand from the cab. Here again the actual working is quite simple and easily mastered. The movable trip fitted between the rails has

three possible positions. The central position is a neutral one for the Nos. 50 and 51 Locomotives, and these engines will pass by when the trip is in this position. If you set the trip to the left, however, as seen looking ahead from the the engine approaching it, the trip will contact the brake gear underneath the engine and the train will stop. By the time this has happened the engine will have passed the brake trip on the track, so that when the brake is released by the lever in the cab the train will go on. The Brake Rail trip can now be put out of action, unless it is required to stop the train on its next journey round.

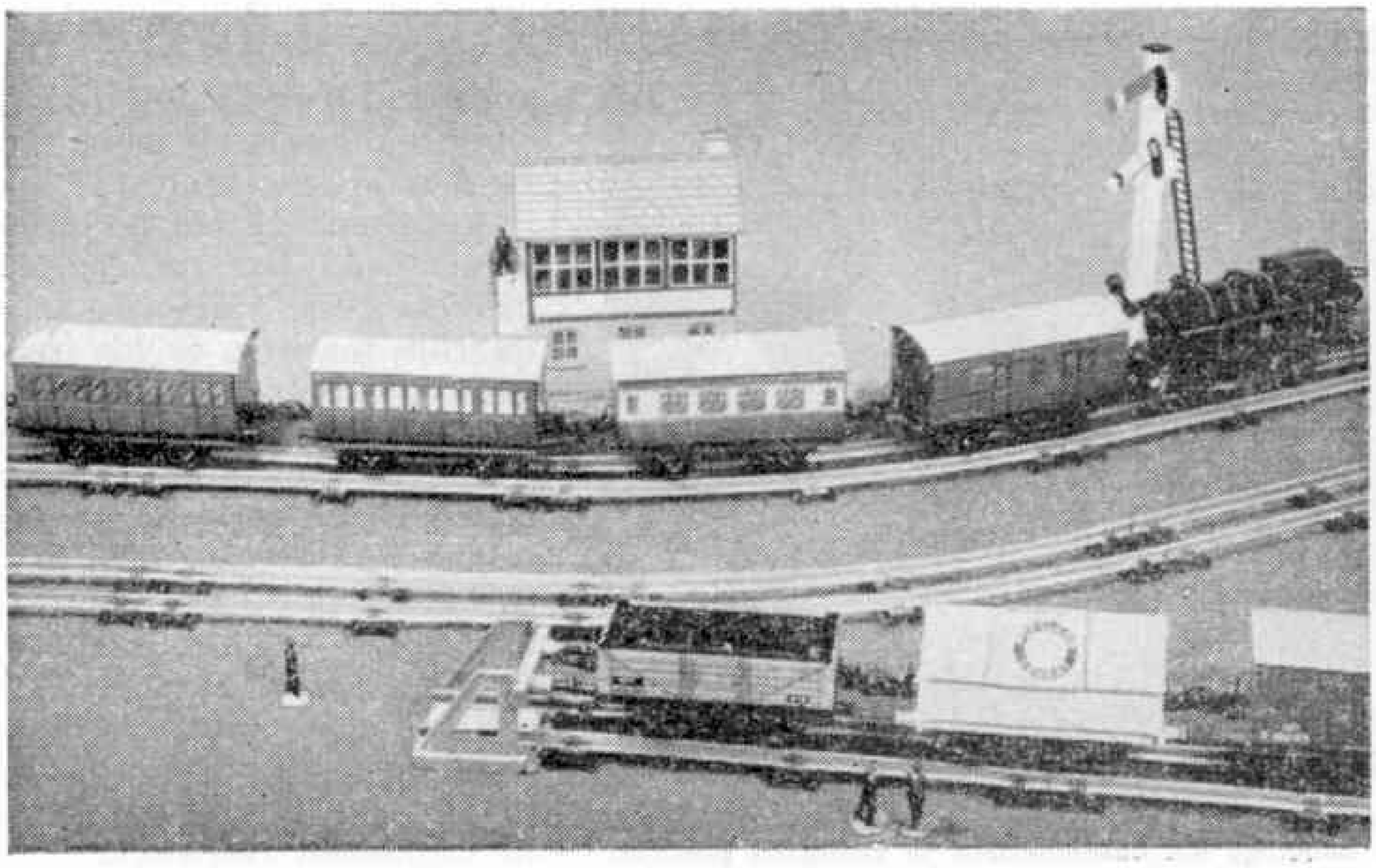
With reversing movements however things are a little different, and new owners of Nos. 50 and 51 Locomotives are sometimes a little puzzled. The trip on the Brake Rail is set to the right, as viewed from the approaching engine, when it is desired to carry out reversing. So when the engine comes along the track the trip engages the reversing gear as the engine passes. The engine of course then starts to move backward. Now this is where the puzzle begins; the reversing gear will be operated again by the Rail trip, *unless the latter is put into the neutral position before the engine reaches it for the second time.*



A train of Hopper Wagons makes its way past the yard in which the Hornby Goods Platform is served by two siding tracks.

This is a well-known characteristic of track tripping arrangements for clockwork engines. Obviously they must work in both directions, that is whether the engine is running forward or backward. So the track trip must be put out of action, as just described, once reversing has been carried out—unless you want your engine to just dither to and fro until the motor runs down!

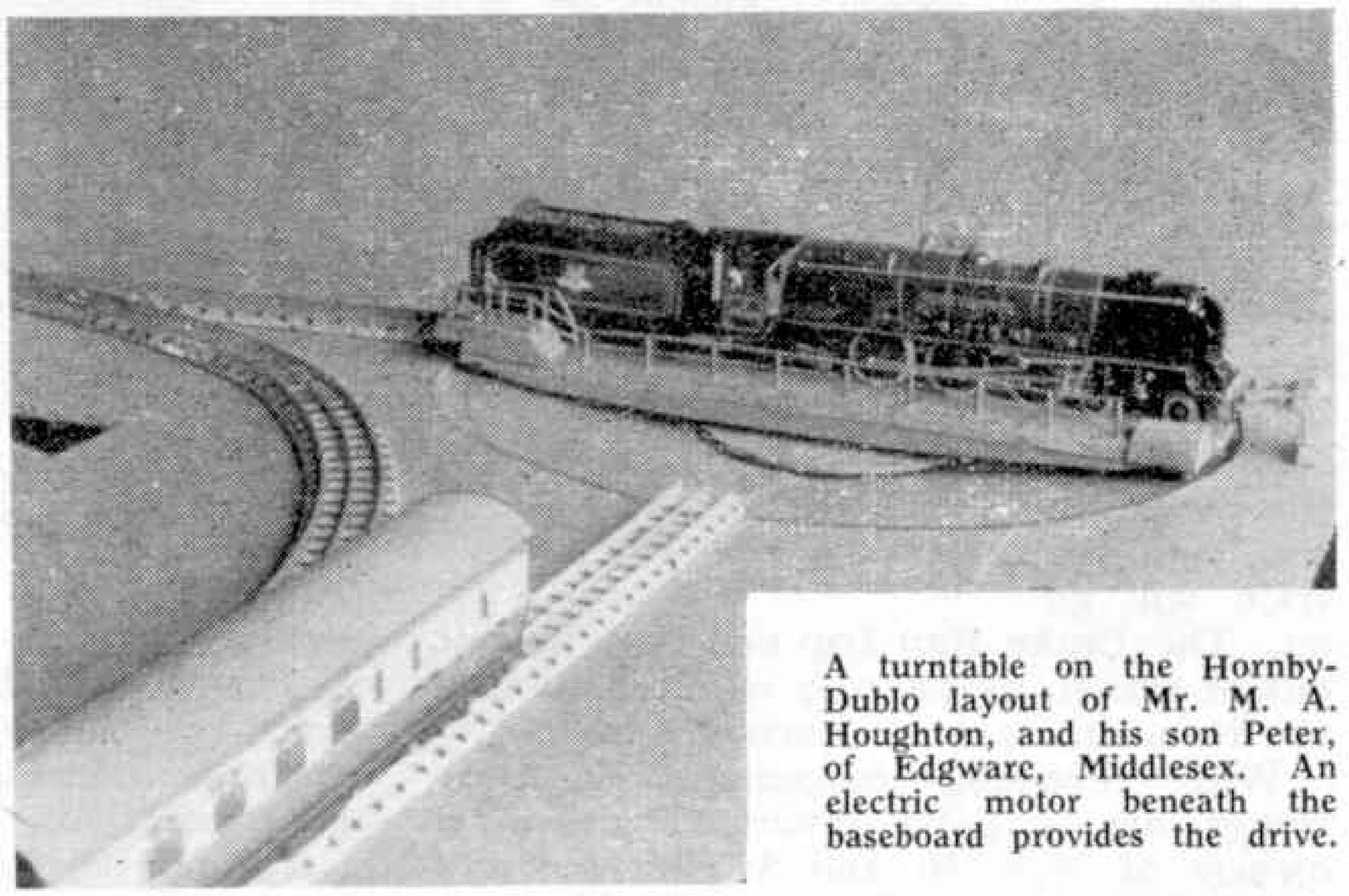
Extensions to the track or other developments can go ahead once the new engine or train settles down to its job. Buffer Stops and Points suggest sidings, in which vehicles can stand. Several sidings together can form a shunting yard.



This stopping train of compartment stock includes one corridor-type vehicle in its make up, a familiar sight in real practice.

Why Not a Turntable?

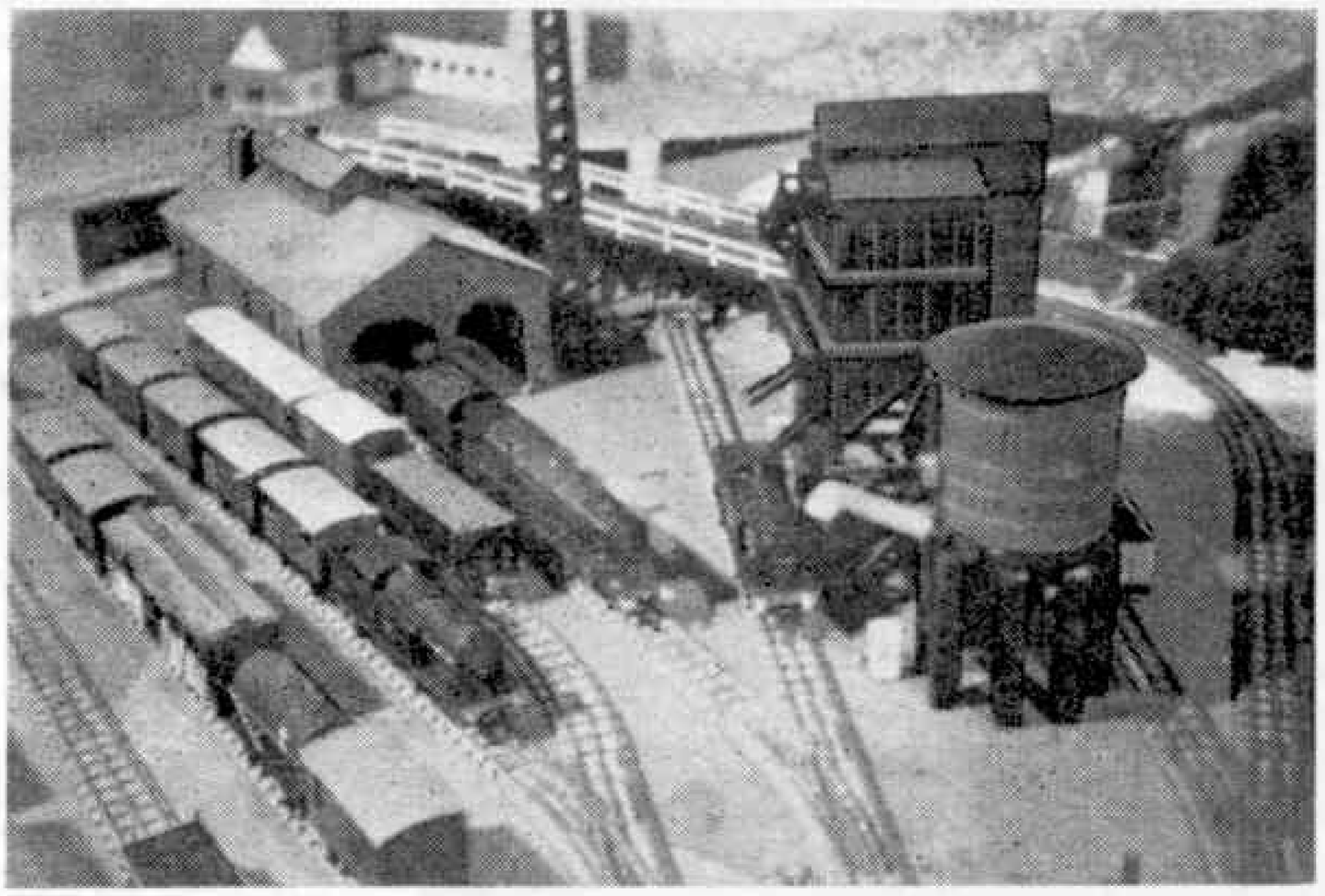
"*WHY not, indeed?*" seems to have been the thought that occurred to Mr. M. A. Houghton and his son Peter, both of whom are of course keen Hornby-Dublo operators. Many owners turn their Hornby-Dublo engines by means of the well-known "S" curve or reversing loop arrangement, which also provides for turning a complete train. Others use a triangular junction. Both arrangements are very useful, but they want a fair amount of space. The Houghtons had only a limited area in which to work, as can be seen from the illustration. So the obvious solution was a turntable, and they made one to fit in a corner of the baseboard of their line.



A turntable on the Hornby-Dublo layout of Mr. M. A. Houghton, and his son Peter, of Edgware, Middlesex. An electric motor beneath the baseboard provides the drive.

This turntable is arranged in such a way that it could only be applied to a baseboard system, for it is turned by means of a small electric motor fitted beneath the board. The gear train used for the transmission was salvaged from an old clock! It was ingeniously adapted for its purpose. The central driving shaft gives some support to the turntable, but just to make sure, and to give smooth and quiet running, the four corners are carried on small wheels to which Dinky Toys tyres are fitted.

Apart from the distinction of possessing this efficient turntable, the Houghton railway is unusual in that the baseboard hangs on wires! These pass through the ceiling and over pulleys in the attic, with a counterweight arrangement, so that the entire railway can be raised to the ceiling out of the way when not in use. When in the normal operating position the baseboard is supported by six legs that are fitted to its main frame, and are detachable when the system is out of use.



A yard scene on the railway of Mr. H. A. Moir, Nelson, B.C. The yard layout is neat and the buildings are characteristic of Canadian practice.

Another Hornby-Dublo owner who has set out to provide his railway with lineside features of his own making is Mr. H. A. Moir, Nelson, B.C. A busy yard scene on his system is seen in our lower illustration. As might be expected, the lineside buildings follow Canadian practice, the circular water tank on its numerous legs and with its hinged water chute being particularly characteristic of Canadian railways.

Club and Branch News

WITH THE SECRETARY

A HAPPY NEW YEAR!

I have great pleasure in wishing all members of the Guild and H.R.C. a very happy and prosperous year in 1955.

The making of resolutions is very fashionable at this time, and I would like all members to resolve to recruit at least one new member during this Session, and in this way make the pleasures of Club and Branch life even more widely known than they are at present.

MERIT MEDALLIONS

Within the next few weeks I shall be compiling my 1954 list of Merit Medallion awards. A preliminary glance through my records, however, shows that quite a number of Clubs have not recently taken advantage of this excellent form of official recognition of good work by members.

I want all Leaders to make the best use possible of this premier award of the Guild, and I shall be glad to receive their nominations in respect of the first of this winter's Sessions as soon as possible. For the benefit of new Clubs I will mention again that two Merit Medallions are available per Club each Session, and that they are awarded on the recommendations of Leaders for general and sustained good work on behalf of the Guild and the Club; thus they are quite distinct from prizes awarded by Clubs themselves in respect of particular model-building or other achievements.

H.R.C. BRANCH RECENTLY INCORPORATED

No. 554, Esk Park (Brechin)—Chairman: Mr. R. H. B. Wallace, Esk Park, Brechin, Angus.

CLUB NOTES

Town Thorns School (Easenhall) M.C. — The subject of a recent Model-Building meeting was "Any model involving 'up and down' and 'to and fro' movements." It resulted in some excellent models of a steam engine, stamping machine, weighing scales, cranes and a railway junction signal. An outing to a point where the Midland Region main line from Euston to the North runs near to the school provided opportunity for some excellent railway photographs to be obtained. A model aircraft section has been formed, and a model railway section is to be started. Club roll: 11. *Secretary:* P. Tranter, Town Thorns School, Easenhall, nr. Rugby.

Launceston M.C. — The Club stock of Meccano has been increased, and members have been busy building models for an Exhibition. A talk on *Space Travel*, illustrated by a film strip loaned from the British Interplanetary Society and pictures shown through an epidiascope, was greatly enjoyed. Model aeroplane activities have been added to the Club programme. Club roll: 55. *Secretary:* R. J. Keast, "Lytham," Dunheved Road, Launceston, Cornwall.

Mile End (Portsmouth) M.C.—Members have been assisting the associated H.R.C. Branch in preparing for its Clockwork Railway Exhibition. A recent "best Meccano model of the month" was a crane lorry built by S. King. A mock trial caused much amusement. A recruiting drive is to be launched. Club roll: 42. *Secretary:* Mr. A. J. Nicholson, 213 Sultan Road, Buckland, Portsmouth.

BRANCH NEWS

Newport (I.O.W.)—At one meeting the Secretary gave a survey of the successful events of the past Branch year. Two railway workers have kindly undertaken to give talks to the members. It has been decided to construct some scenery for the Branch layout. *Secretary:* E. Cousins, West Street, Newport, Isle of Wight.

Aviary Model Railway (Leeds)—At the time of writing the new Branch room is almost ready for occupation. Members have been busy constructing scenic effects for the extensive Dublo layout to be laid down there. The first anniversary of the incorporation of the Branch was celebrated with a little reception held at the home of Mr. Myers, the Chairman, during which a large iced cake surmounted by a model locomotive in sugar was cut and greatly enjoyed. *Secretary:* L. Blakey, 21 Arley Street, Armley, Leeds 12.

Mile End (Portsmouth)—Members have again visited the Camber Docks reconstruction project. Several interesting talks have been given, including one by a new member in which he described a visit to India. The Branch library now has over 150 books. *Acting Secretary:* Mr. A. J. Nicholson, 213 Sultan Road, Buckland, Portsmouth, Hants.

A happy group of officials and members of the East Grinstead Branch No. 544. This enthusiastic Branch was incorporated in March 1953. It operates an extensive layout that is fully electrified and is controlled from three signal boxes. Scenery and lineside features have been constructed by the members.

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For other Stamp Advertisements see also pages 46 and xviii

Stamp Collectors' Corner

By F. E. Metcalfe

TOOLS OF THE TRADE

SOME time ago I was reading some comments by a writer who was complaining that stamp collectors will not spend cash on books written on their hobby, pointing out how they lose by this attitude. I think there is some truth in this contention, but even if there is, modern collectors take up much more freely the "tools of their trade," which is how the writer referred to books, etc., than did the philatelic old timers.

Take catalogues for instance. There was recently published the Commonwealth Catalogue of Queen Elizabeth Stamps. A very large printing was disposed of by the time it was published. Each autumn several catalogues are brought out, and collectors simply tumble over one another to buy the latest release. Yet not very long ago, even quite important collectors made do with a catalogue a year or two old, and dealers could generally sell the previous year's catalogues better than the new ones—because they were sold at half price!

And catalogues cost very much more today than they did before the war. Take that really fine Gibbons catalogue The Whole World Simplified, which is just the work for a thematic collector, as it contains the world stamps in one compact volume. When first published its price was five shillings. Now it costs over three times as much, but probably more copies than ever are now sold. Before I leave catalogues I must give just one warning. Don't make do with an old catalogue; that is a false economy.

There has been a big change also regarding albums. Far too many printed albums are used by grown-ups, who should be using plain loose leaf volumes. But even so, a collector today has to be collecting very little if he is content with anything but a proper album. Yet once upon a time, old exercise books, discarded ledgers, etc., were the order of the day. I once read in a gardening book, that if one would make a success of the hobby of gardening, one should buy the best greenhouse one could afford. Now I will not go as far as to repeat that advice in regard to a stamp album, for some cost up to £10. But I do say that a decent album should be bought, and not one of those tomes made with fixed leaves and poor paper, for if even really good stamps are mounted in such a book they will never look well. That is why I am always against printed albums. The paper used for them is never so good as that used in the loose leaf albums, but above all, it is the utter lack of individuality about all collections mounted in a printed album that for me rules them out of court. So now, buy a good loose leaf album.

For the benefit of juniors I would add, do please avoid getting your collection out until those hands have been scrubbed, for nothing gets grubby so quickly as white paper. If you do get some finger marks on any of the pages, providing that these have not been caused by grease, it is surprising what wonders a piece of rubber can effect. Pages interleaved with transparent paper should always be used, for this is a first-class material for protecting stamps. I do not particularly like cellophane, for it is so susceptible to moisture, though it looks very well.

In the field of stamp mounts also there have been great changes. In the early days of collecting, stamps were simply glued to the pages of the book used, and what glue some of it was—horrible stuff looking like treacle and acting like concrete. Stamps that today would have been worth thousands of pounds, had they been properly cared for, are now worth little or nothing because of this.

Later the more advanced collector used stamp edging. This was looked upon as a great step forward, and as far as used stamps were concerned, it was all right, but the fastidious collector of today pales visibly when he turns up a mint stamp and finds a piece of stamp edging stuck on the back. This is where another little handy tool comes in. I have mentioned "sweat boxes" before. You simply pop a stamp face downwards inside one of them and after a few minutes it can be taken out and the mount or mounts removed with very little damage to the gum. All collectors who care for their stamps could add one to their kits.

As far as the stamp mounts are concerned, we have gone to the other extreme, for some of the mounts now on the market are not only very expensive, and will peel off a stamp with little disturbance to the gum, but it is not always an easy job to get them even to stick! No, you can leave these expensive foreign mounts alone. Get a packet of good British mounts, costing about 1/6 a thousand, and these will do all a stamp mount can be expected to do.

There is nothing more harmful to stamps than handling them. No matter how clean your hands may be, every time you take a stamp between finger and thumb you leave a tiny mark, and a few of these marks means that a stamp has lost its fresh appearance. And yet, how often do we see stamps being handled thus. The remedy is to get a pair of stamp tweezers, or tongs, as our American cousins call them. They can be bought for as low as 1/6, but a nice pair costs about twice that figure, and money could not be better spent by a collector. Here again British tweezers are second to none. Sheffield turns out some beauties, and they last a long time. I have had my own pair for well over thirty years. You can get them with what is known as spade ends or narrow ends. I prefer the former; they are safer. If you have a pair, take care to have them handy; but don't keep them in your pocket, for ten to one you will lose them if you do and that will give you an excuse to use your fingers. Always bad manners, anyhow.

Many collectors use a (*Continued on page 48*)

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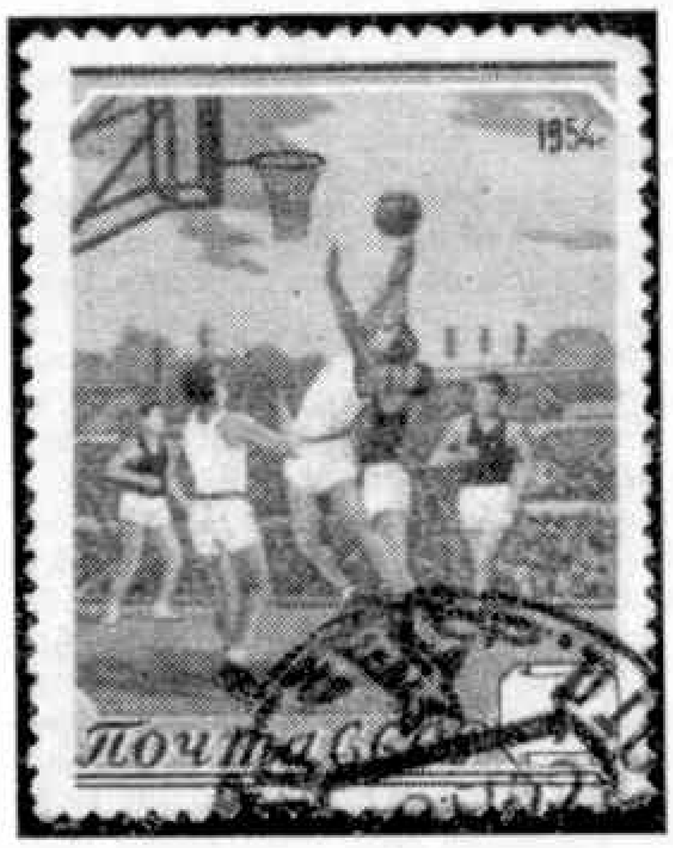
For other Stamp Advertisements see also pages 44 and xviii

Stamp Gossip

BASKET BALL

THIS is a sport that seems to be growing in popularity at home, but we have a long way to go yet before we can raise a team to compete with some of those in the U.S.A., or even draw a crowd such as the one depicted on the handsome Russian stamp illustrated. It is almost incredible that Russia should have made such progress in sport in the relatively few years that have been devoted to getting to the top. That they have got to the top, even compared with the U.S.A., is proved by the performances they have put up wherever they have competed.



FOLK DANCING

We may not have gone in for basket ball to the same extent as people living overseas, but the Roumanian stamp illustrated will interest many, for as a nation we are just as keen on folk dancing as anyone, though of course in countries like Roumania and Hungary this form of pleasure is particularly popular. Hungary is a great country for folk dancing. I am no folk dancer myself, but often I have enjoyed watching the peasants, in their colourful costumes, going through their gyrations, if I dare use that word to describe their movements. Perhaps it was the wonderful costumes that were the most attractive feature and once I saw quite a funny sight in connection with these fancy dresses. A number of women had been given seats in the opera after one of their performances. They arrived attired in their starched skirts, which had no connection with the Dior new line, and to see them trying to sit down in the seats was too comical for words. But everyone, including the dancers, took it as good fun, even if they could not take the seats.

MEXICO

It is quite a time since the stamps of Mexico were referred to here, but all the time this country has been turning out new ones. Although the designs may cover all kinds of subjects, yet there is a something about them that is so distinctive that even if the name of the country concerned were not mentioned we should know it.

The stamp shown this time is one of three issued in 1954 to commemorate the Seventh Central American and Caribbean Games, held in Mexico City. In the U.S.A. and other American countries, Mexican stamps are widely collected, chiefly owing to their artistic and attractive designs. As used copies are cheap, and not hard to come by here in Britain, it is a pity that more home collectors do not go in for them. With all the stamp shops at their disposal, enthusiasts in London could easily get together a nice collection, and there are always approval books for those who live away from the capital. The air stamps in particular are well worth going after, as these have such a world-wide demand.

A BEAUTY

I like to select stamps for illustration that are readily obtainable. Some time ago a reader showed me his collection of stamps that had been illustrated in the Magazine, with notes neatly written below the stamps, and they made a most interesting little display.

This month I simply could not resist the 500f. air stamp of French Cameroons. Now isn't it a beauty? That huge rock must be very imposing, but so is the contrast with man's great invention, the aeroplane, circling above those natives who, in a world that has shrunk to the size of a pocket handkerchief through the coming of that plane, are still living the life as we once lived it. Centuries divide us, but who is to say that they are not quite as happy as we are?

To get back to the stamp, this is particularly fine, even for a French Colonial issue. Some time ago I read in an American stamp magazine about "rubbishy French Colonial stamps." Let us face the fact. From an artistic point of view—surely of great importance—they have our own colonial stamps beaten to a frazzle, whatever a frazzle may be. How I wish I could design a stamp like the one illustrated! And yet the world prefers in the main our relatively stodgy issues, for it is felt that they are issued by postal administrations that will not indulge in over-exploitation. It is true that when the "Silver Wedding" commemoratives, with their high face value, were issued, we were indulging in unpardonable excess, but it has only happened once, and as the low face value of subsequent commemorative issues testifies, the Colonial Office has learned its lesson. Or has it? Anyhow, our Commonwealth stamps are more popular than ever.

Incidentally, collectors have often wondered why Cyprus has so many printings of high values. Apparently they can be used for paying taxes, such as motor car licences, etc. Such uses for stamps in other parts of the Commonwealth is often the explanation for the high values about which we collectors complain.

Featherweight Fighter—(*Continued from page 9*)

sound in level flight. Add to that the fact that it will be able to carry two 500 lb. high explosive or napalm bombs, or twelve 3 in. rockets under its wings, in addition to its fixed armament of 30 mm. guns, and the result should be an aircraft equally useful for interception or ground attack duties.

But the real attraction is that five Gnat airframes can be built in the time taken to build one conventional fighter airframe, and that 20 fully-equipped Gnats will cost no more than six fully-equipped standard fighters. Furthermore, the Gnats would be easier to fly, more manœuvrable, easier and cheaper to maintain.

Despite all these claims, and the Midge's spectacular performance at Farnborough, there is still no sign of Air Ministry interest in the Gnat. But it is in the running for a big contract for ground attack duties with N.A.T.O. air forces, and Folland are also developing a lightweight carrier-based fighter on the same lines. There is no reason why either type should not prove as useful a weapon in the armoury of the free world as Mr. Petter's Canberra.

Beattock Bank—(*Continued from page 12*)

bringing with it a breath of the atmosphere of half a century ago. As I write, the two-mile Moffat branch, worked by an 0–4–4T fitted for push and pull, is still open for passenger traffic and provides a rural atmosphere as well as further variety.

The mile a minute bookings between Carstairs or Symington and Carlisle call for some very high downhill speeds on the Bank. I remember a day in the spring of 1949, when I was travelling to Lockerbie by the 5.40 ex-Glasgow Central and after a most uninteresting trip to the Summit the train, hauled by No. 45535 *Sir Herbert Walker*, was slowed to 30 m.p.h. about Greskine. It then accelerated to such an extent as to attain exactly 90 m.p.h. before brakes were simply slammed on for the Beattock stop.

Worthy of mention too is the Summit Pilot, usually a 0–4–4T and one coach, which makes two return trips per day from Beattock Station to the summit for the benefit of those who live in the lineside railway cottages accommodating surfacemen, etc. In this train are carried all mails, parcels and other household deliveries and the train stops at the front doors, just like a motor delivery van.

Time passes and trains pass, but as long as there are steam-operated main lines between Glasgow and the borders, Beattock Bank will always be a never failing source of interest to all railway enthusiasts.

Weather!—(*Continued from page 15*)

satisfied forecast consumers can be listed road and railway executives, the public utility boards, food industries and, on an ever increasing scale, farmers, who can now obtain regular frost or potato blight warnings, or whatever service they require by telephone or telegram. All the while, of course, the shipping and gale warning services go on, saving countless lives.

Another extension of the public weather service is the provision of more frequent broadcast reports and the innovation of the detailed regional forecasts. Again, the television forecasts have been adapted to meet the requirements of most viewers. It was not easy to arrange for a forecaster to talk almost conversationally, and, at the same time, to put over the official bulletin without adding to it in any way in the course of talking. Nevertheless, the public demand for this new type of forecast was so strong that, whatever the difficulties in presentation, it had to be given. Now, after a very short time, it has become the most widely followed of all the general weather services.

Look out for the further developments that will surely come in the near future. The Meteorological Office these days is very wideawake and is anxious to make itself even more useful than it has been in the past.

B.E.A.'s Helicopter Plans—(*Continued from page 31*)

area of 1,000 ft. square, to permit safe approaches from any direction at the standard glide slope angle of 12-15 degrees. But, obviously, the higher the site, the fewer the obstructions; so that a rooftop rotor-station could probably be reduced to an area of 250 ft. square.

After which members of the Aerodrome Owners' Association presumably dashed home to measure the sizes of their local town squares and to dream of the day when Rotodynes will be as familiar a sight as omnibuses are today. It will be a very good thing for them; as their aerodromes will form ideal air bus depots, where the aircraft can be refuelled, serviced, repaired and "garaged."

Stamp Collectors' Corner—(*Continued from page 45*)

stock book. You know the kind of thing I mean, a book or pocket booklet with strips across, in which you can place stamps. If you get one of these, do take care that the stamps are placed in it properly, for it is so easy to double perforations back and crease your stamps. I prefer transparent envelopes. A hundred of these can be bought for a shilling or so, and they are much safer, if all are kept in a cardboard box.

I have said that I do not care much for cellophane. Now some mint stamps are kept in what are called pochettes. These are tiny envelopes, just a fraction larger than a stamp, made of cellophane, but they are very dangerous and I would warn collectors against using them. The snag is that they contract or expand according to the humidity in the air. You put a mint stamp in one of these, and it looks all right; but next time you see it, the pochette has contracted and creased up, and when you take the stamp out, it is cockled.

THE BASSETT-LOWKE CATALOGUE

The 1954 Bassett-Lowke catalogue is one of the most comprehensive published by this well-known firm in recent times. It lists all the firm's current miniature railway products in Gauge 0, clockwork, electric and steam locomotives, with track and lineside accessories of different types. There are some layout diagrams and many illustrations and details of the numerous separate small parts that are so useful to the Gauge 0 home constructor.

Hornby-Dublo is well represented in a selection of railway equipment in 00 Gauge of various makes, and at the other end of the scale as far as size is concerned, there is a short section dealing with large-scale steam locomotives, some useful fittings and special track parts for them.

Copies can be obtained from the showrooms of the firm in London and Manchester, or by post from Dept. MR/17 Bassett-Lowke Ltd., Northampton. The price is 2/– including postage.

This Month's Special Articles

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Competitions! Open To All Readers

Prize-winning entries in M.M. competitions become the property of Meccano Ltd. Unsuccessful entries in photographic, drawing and similar contests will be returned if suitable stamped addressed envelopes or wrappers are enclosed with them.

Which is Your Favourite 1954 Cover?

It has become traditional for the main January competition to be a cover voting one, and therefore this month we again give readers a chance to tell us which of the previous years *M.M.* covers they like best. The twelve 1954 covers are reproduced in miniature above. These black and white reproductions give no idea of the brilliancy and colour of the originals, of course, and are intended merely as a reminder of what the subjects were.

Each entrant is invited to state, on a postcard: A, which of the 1954 covers he likes best; and B, in what order he thinks the covers will be placed by the combined votes of the competitors. The covers must be referred to by the names of the months in which they appeared, and it is not necessary for a competitor to place his own choice at the head of list B.

There will be the usual sections in this contest, for Home and Overseas readers respectively, and in each prizes of 21/–, 15/– and 10/6 will be awarded for the best entries in order of merit, with consolation prizes for those who just fail to secure one of the principal awards. Entries should be addressed *1954 Cover Voting Contest, Meccano Magazine, Binns Road, Liverpool 13.* The closing dates in this contest are 28th February in the Home Section and 31st May in the Overseas Section.

Locomotive Names Contest

Competitions dealing with locomotive names are always extremely popular, and for this month we have arranged another that should prove attractive to all railway enthusiasts. Below are twelve clues, each of which leads directly to the name of a British Railways locomotive, and we ask readers to find these names.

1. Mid-week footballers?
2. King of birds.
3. Hire a dwelling.
4. Well-known lighthouse.
5. This beetle is a menace.
6. Famous author of classics.
7. Noted Scottish station.
8. Popular outdoor sport.
9. Not as fast as name suggests.
10. Well-known Southern Region junction.
11. Famous Duke—or form of boot.
12. If you don't at first succeed, try again.

When a competitor is satisfied that he has found the names indicated by the clues, he should make a list of them in numbered order, stating also the running number, class and wheel arrangement of each engine concerned, with the Region of British Railways to which each belongs.

There will be the usual two sections, Home and Overseas respectively, and in each prizes to the value of 21/–, 15/– and 10/6 will be awarded for the best efforts in order of merit. There will also be a number of consolation prizes. Entries should be written on one side of the paper only, and each should bear the full name, age and address of the competitor. Envelopes containing them should be addressed to *January Locomotive Names Contest, Meccano Magazine, Binns Road, Liverpool 13.*

Closing dates: Home Section, 28th February; Overseas Section, 31st May.

From Our Readers

This page is reserved for articles from our readers. Contributions not exceeding 500 words in length are invited on any subject of which the writer has special knowledge or experience. These should be written neatly on one side of the paper only, and should be accompanied if possible by original photographs for use as illustrations. Articles published will be paid for. Statements in articles submitted are accepted as being sent in good faith, but the Editor takes no responsibility for their accuracy.

THE STREAMLINED CLYDE FLEET

Early in 1952 British Railways announced their intention of spending £1,000,000 on seven new vessels to modernise the Clyde fleet. Four passenger ferry boats and three general purpose ships were ordered.

The Maid of Skelmorlie, one of the four new diesel passenger vessels of the B.R. Clyde Fleet, is here seen approaching Dunoon Pier prior to an afternoon cruise. Photograph by R. Watson, Dunoon.

The first of the passenger ferry boats, the *Maid of Ashton*, was launched on 17th February 1953 by Yarrow and Co. Ltd., Scotstoun, and went into service on 25th May. She is employed on the Gourock–Kilcreggan–Holy Loch run all the year.

The next two vessels were the product of A. and J. Inglis Ltd., Pointhouse Shipyard, Glasgow. The *Maid of Argyll* commenced service on the Craigendoran–Dunoon–Rothesay route early in June 1953. She was followed a fortnight later by the *Maid of Skelmorlie*, seen in the accompanying illustration, which is employed on afternoon and evening excursions from various Clyde resorts.

The final passenger ferry boat, the *Maid of Cumbrae*, was built by the Ardrossan Dockyard Ltd. In her first season she was sailing from Glasgow (Bridge Wharf) to Dunoon. Last year, however, she joined the *Maid of Skelmorlie* on afternoon and evening excursions.

The four vessels are identical, apart from a few very minor details. They have an overall length of 165 ft., a breadth of 28 ft. and a depth of 10 ft., with a loaded draught of 6 ft., and a displacement of 420 tons. Their passenger capacity is 650, and speed is 15 knots. Officers and crew, who number 14, are housed in separate cabins on the lower deck, aft of the machinery space.

The main propelling machinery consists of two sets of British Polar diesel engines, driving directly four-bladed bronze propellers. There is mechanical ventilation of the engine room. To save top weight the outer funnel, which houses the main and auxiliary silencers, is fabricated in aluminium.

The three general purpose vessels are the *Arran*, *Cowal* and *Bute*.

R. Watson (Dunoon).

THE WATERFORD AND TRAMORE RAILWAY

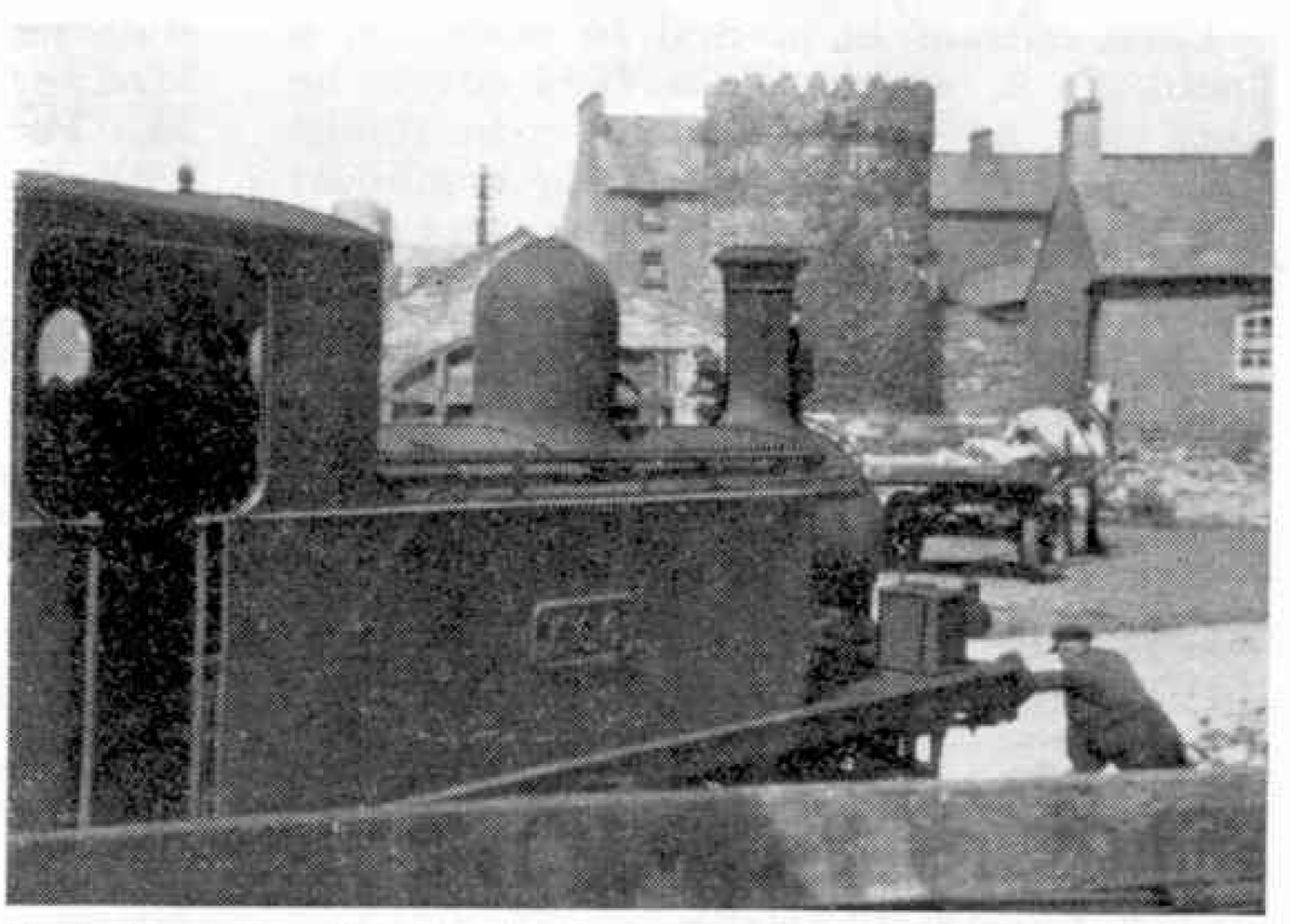
When on holiday in Eire last year, I travelled several times on the Waterford and Tramore Railway, opened in 1853. Its 7½-mile single-line track links Waterford (Manor Station) with the small seaside resort of Tramore. There are no intermediate stations. Although part of the C.I.E., this railway is quite separate from the rest of the Irish system.

The three 0-6-0 locomotives of the line, which are much like the J 71s of the former N.E.R., were built in the 1880s, but were not used on this route until recently. Their numbers are 553, 555 and 560. They take turns working the trains, each doing four days at a time, while one is in the shed being overhauled and the other spare. The rolling stock consists of a number of six-wheeled vehicles and three sets of articulated coaches.

There are several trains a day. The journey is made in about fifteen minutes, and speeds of 45–50 m.p.h. are reached. The trains are quite long, usually about seven coaches, but sometimes up to thirteen at rush-hours.

Now the steam locomotives are to go, and diesels of the same type as or similar to those illustrated in *Railway Notes* for September last will be used instead. They will be lifted on to the track at a point where it is very near to the road.

R. Fleuret (Sunderland).



The Waterford and Tramore 0-6-0 locomotive No. 560 on the turntable at the Waterford terminus of the line. Photograph by R. Fleuret, Sunderland.

Fireside Fun

"Hooray!" yelled the proprietor of a motor repair garage.

"What's up?" asked the foreman. "Good news?"

"I'll say," replied the boss. "Remember last year when our water pipes froze? Well the plumber who fixed them has just brought his car in for overhaul!"

* * * *

Spectator (at football match): "Do the forwards ever score?"

Disappointed Onlooker: "Dunno, I've only seen them play the last three seasons."

* * * *

To the tramp who wanted to earn a bite to eat, the housewife said: "If I thought you were honest I would let you go to the chicken house and gather eggs."

"Lady," he replied with dignity, "I was a manager of a bath house for ten years and never took a bath."

* * * *

". . . No. 8 wins by a neck!"

* * * *

Grandpa: "How are you getting on at school, Reggie?"

Reginald: "Jolly fine, Grandpa. Centre forward in football and right back in lessons."

* * * *

"My papa's a bookkeeper," said Albert proudly.

"Yes, I know it," rejoined Dorothy. "He's keeping several that he borrowed from my papa."

* * * *

Sergeant (bursting in during dinner): "Any complaints?"

Timid Tommy: "If you please, the meat's funny."

Sergeant: "Well then, laugh."

* * * *

Mother: "What kept you in at school to-day?"

Tommy: "I didn't know where the Philippines were."

Mother: "Well, perhaps that will teach you to remember where you put things in future."

"Did the burglars wake you last night?"

"Oh, no! They took things very quietly."

* * * *

Father: "And there, son, I have told you the story of your daddy and the War."

Son: "Yes, daddy, but what did they need all the other soldiers for?"

* * * *

Diner: "Waiter, this soup is no good."

Grouchy Waiter: "Who told you?"

Diner: "A little swallow."

* * * *

"How in the world do you think up your jokes?"

"I just sit down and laugh, then I think backwards."

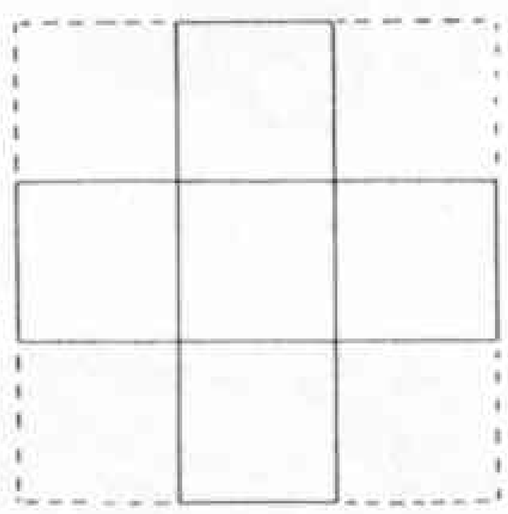
* * * *

BRAIN TEASERS

SQUARING THE CROSS

Draw a square measuring 3 in. each side and then divide it into nine 1 in. squares. Now rub out the four corner squares so that a cross is left, as shown in the sketch alongside.

The problem is to cut the cross, *making only two cuts*, into pieces that can be reformed to make a perfect square.



* * * *

TRICKY FIGURES

Can you arrange four sevens so that they total 50? E.B.P.

* * * *

THE HIDDEN HOBBY

Each of the following definitions is a clue to a five letter word. Place the seven words below each other, and then the letters in the centre column will spell the name of something that is very well-known.

Clues

1. A famous air liner.
2. Wordsworth wrote many of these.
3. We all like to be this.
4. Famous mountains in Canada.
5. To locate.
6. Harmonies.
7. Fumes from burning substance.

* * * *

SOLUTIONS TO LAST MONTH'S PUZZLES

What is it?

The article referred to in this puzzle is a door number figure. One figure 1 would cost 3d. A "1" and a "0" would cost 6d. and "1", "0" and "0", making 100, would cost 9d.

* * *

Find the Names

1. Mr. Justice Darling and Miss Grace Darling.
2. Hampton Court Palace.

* * *

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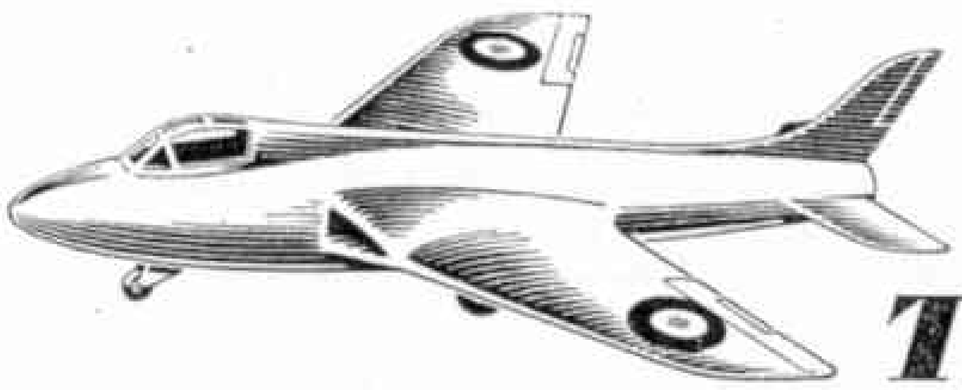
The solution to the Five Minute Crossword is shown alongside.

■	B	A	R	N	■
L	A	D	D	E	R
A	N	D	■	R	E
T	D	■	O	V	A
H	I	N	D	E	R
■	T	O	E	S	■



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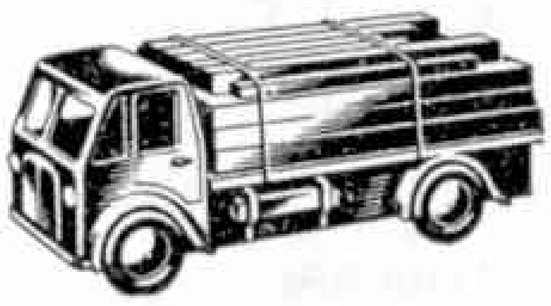

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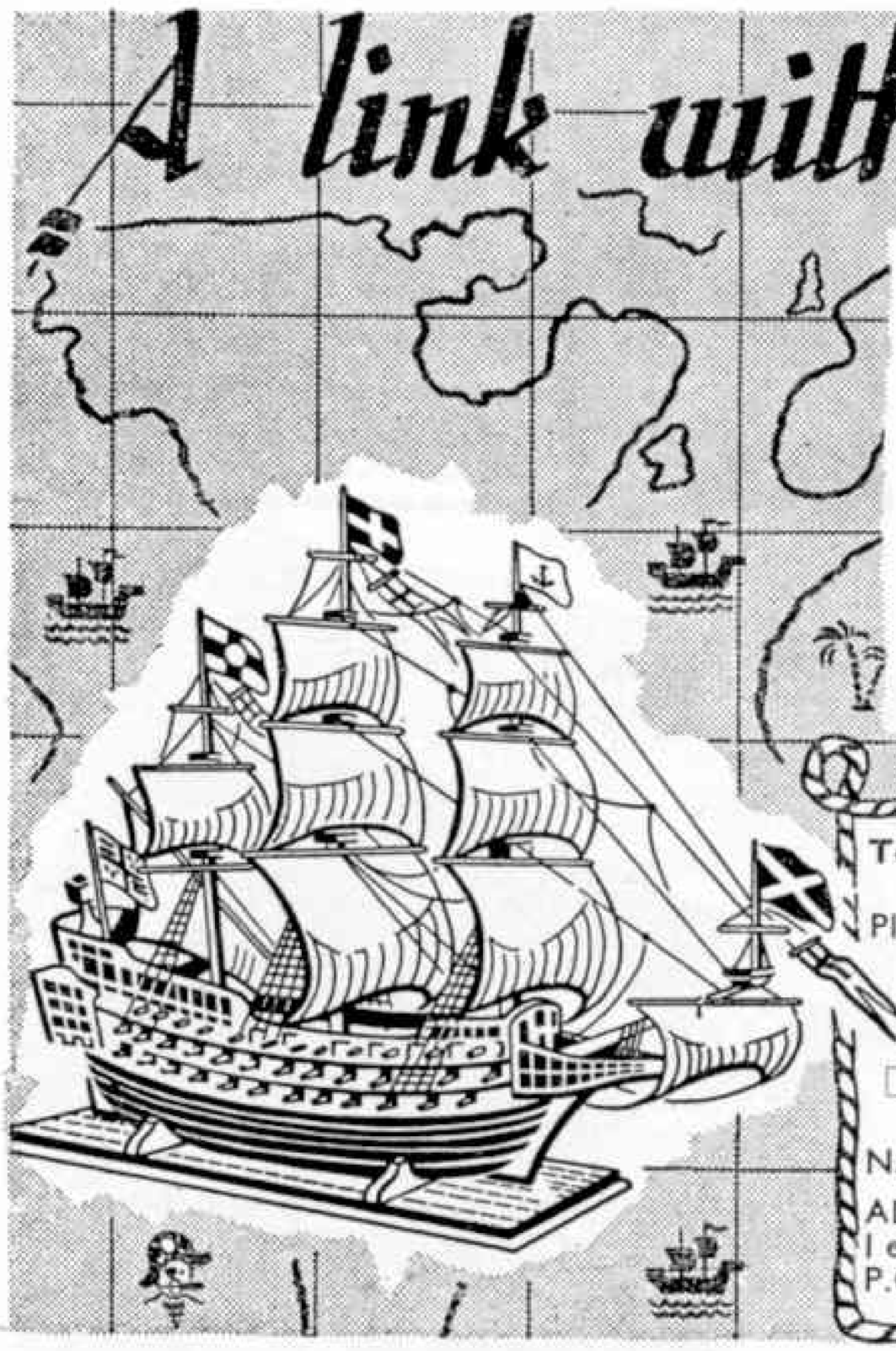

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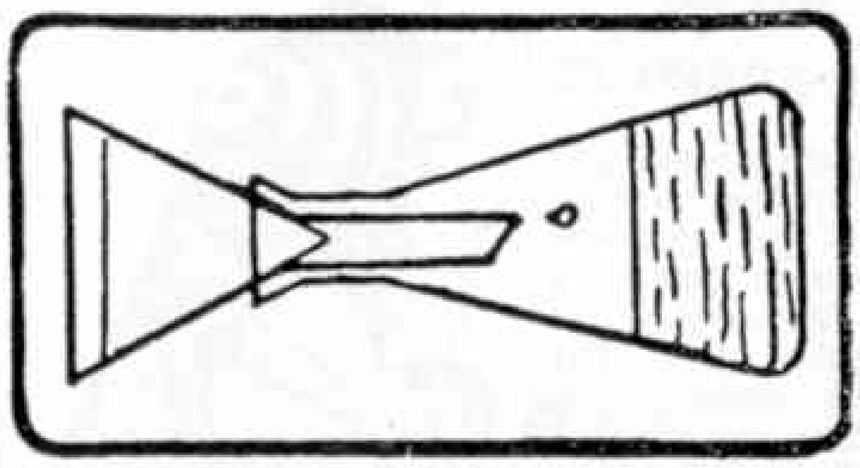

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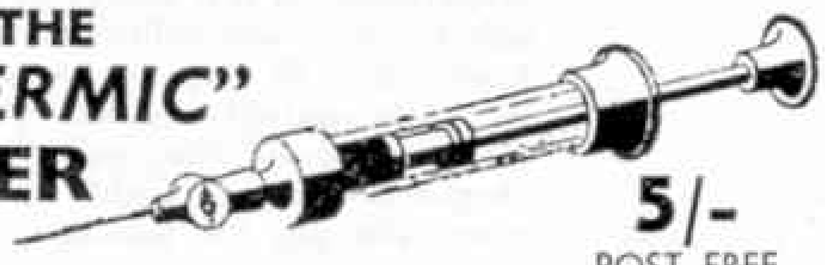

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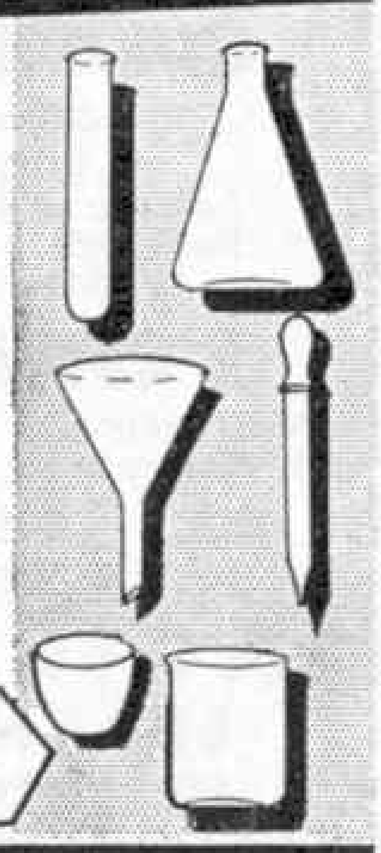

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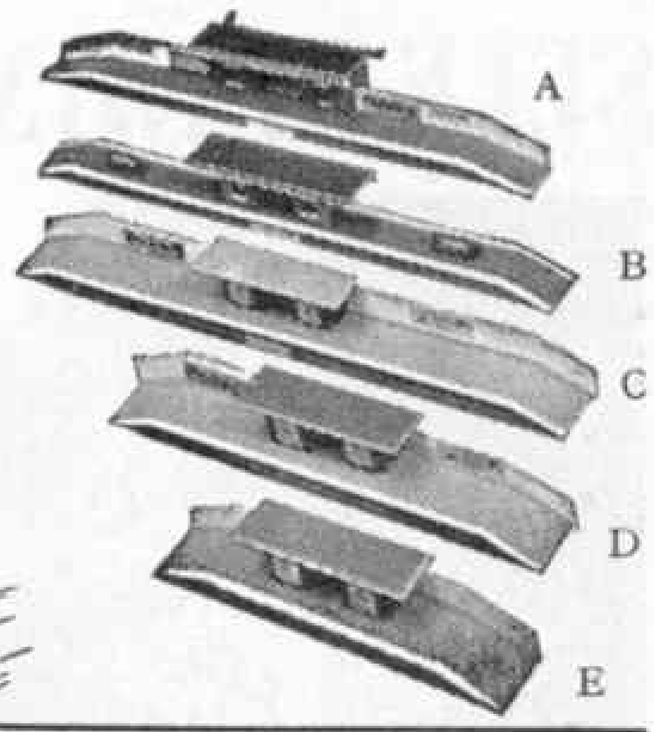

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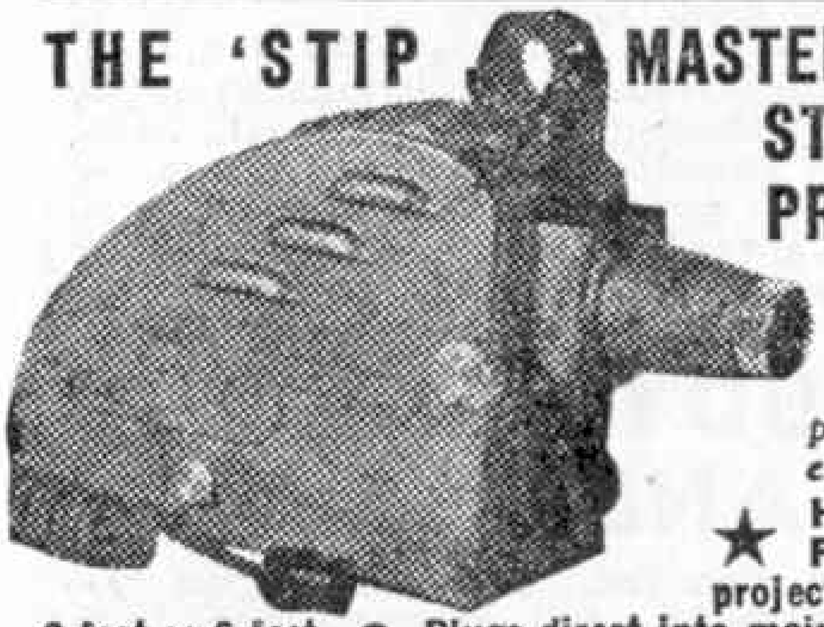

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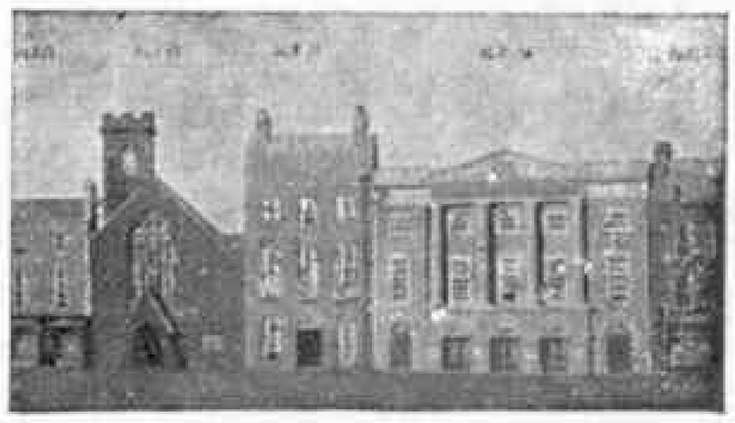

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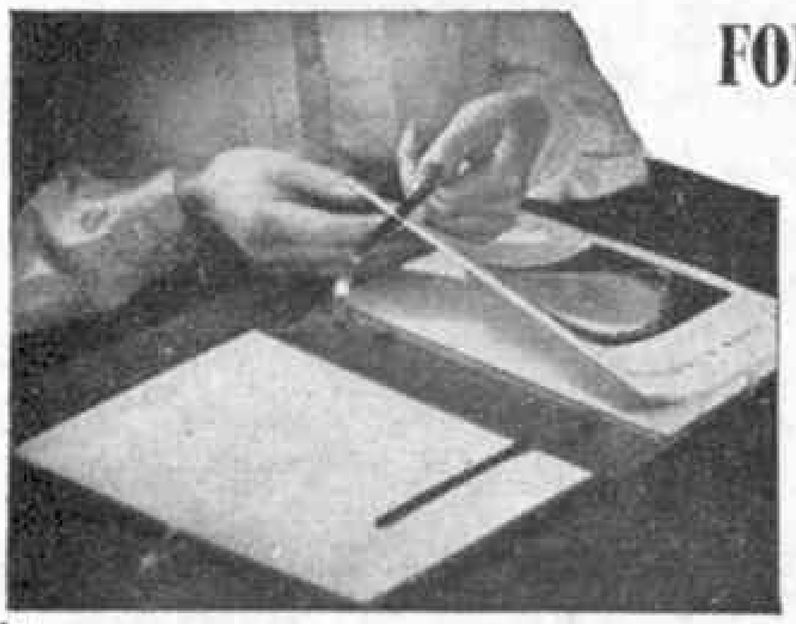

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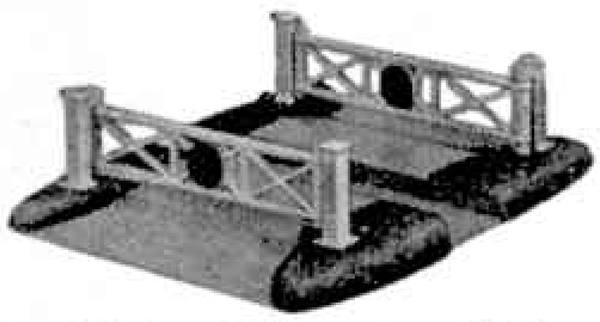

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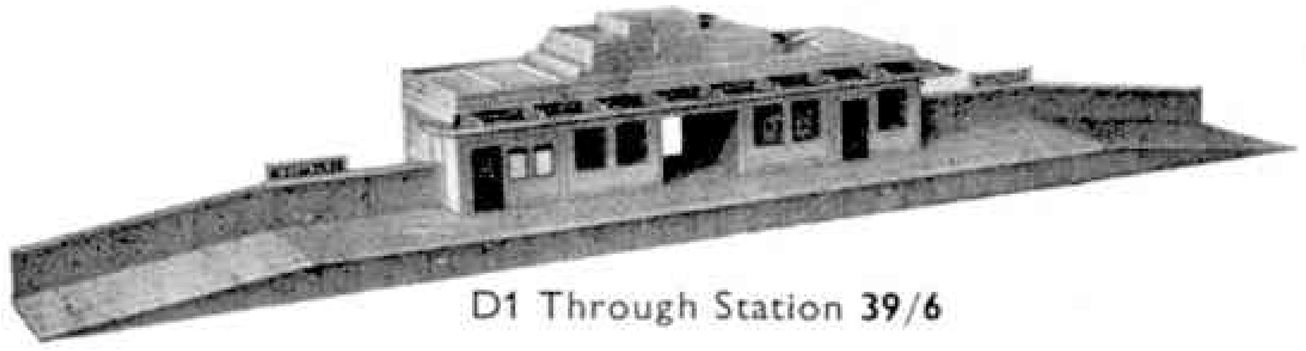

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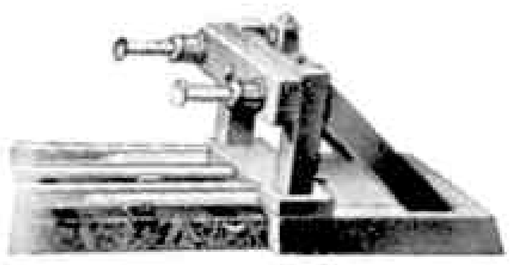

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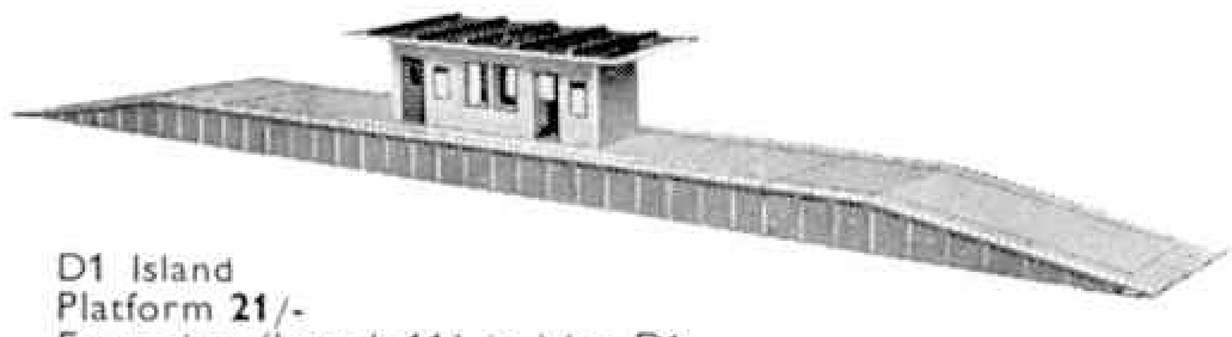

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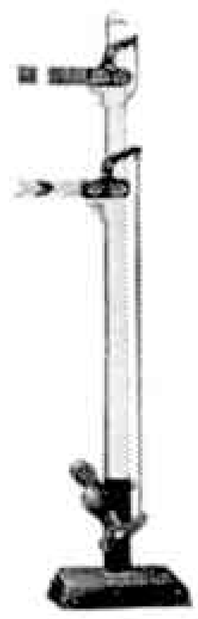
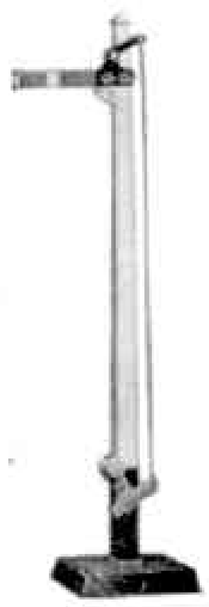


D2 Signal, Double Arm **2/8**



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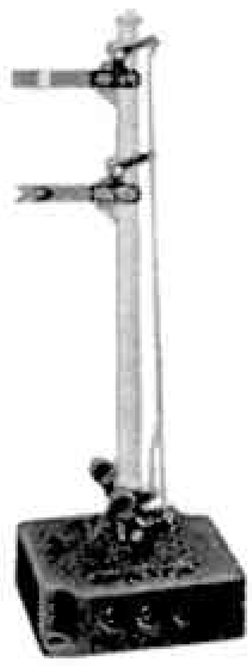
D3 Junction Signal ('home' or 'distant')
3/3



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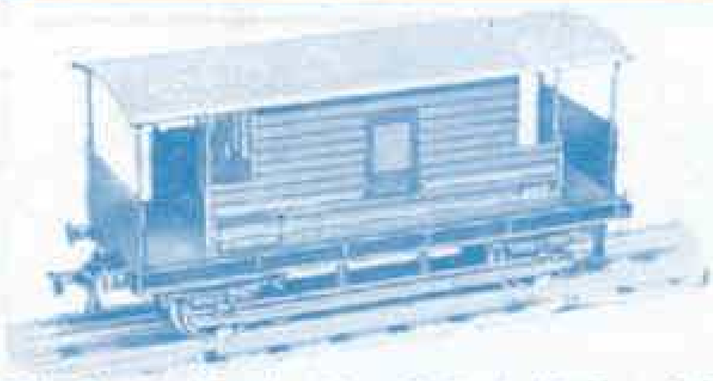
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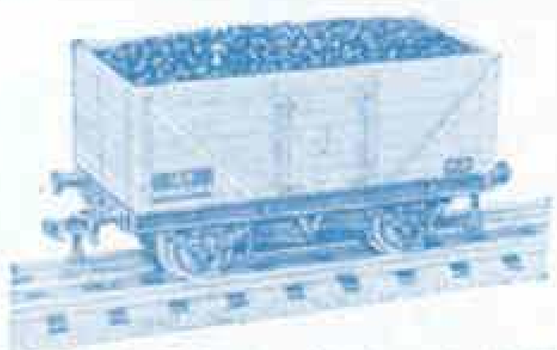
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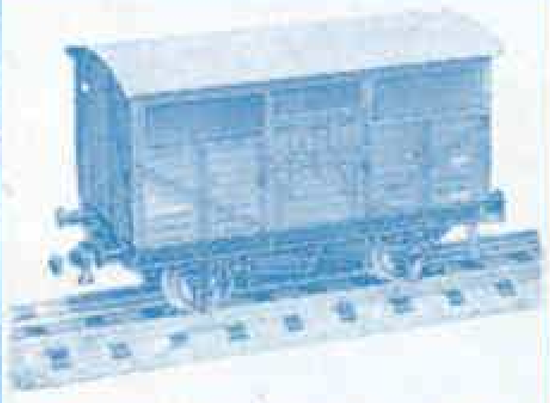
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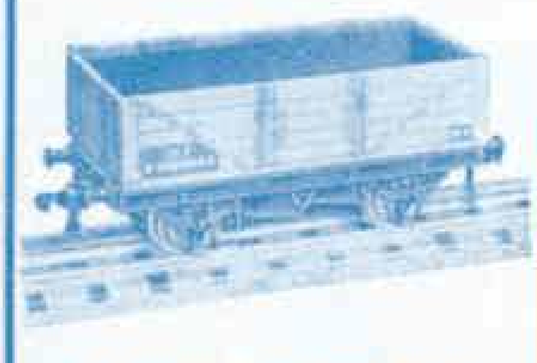
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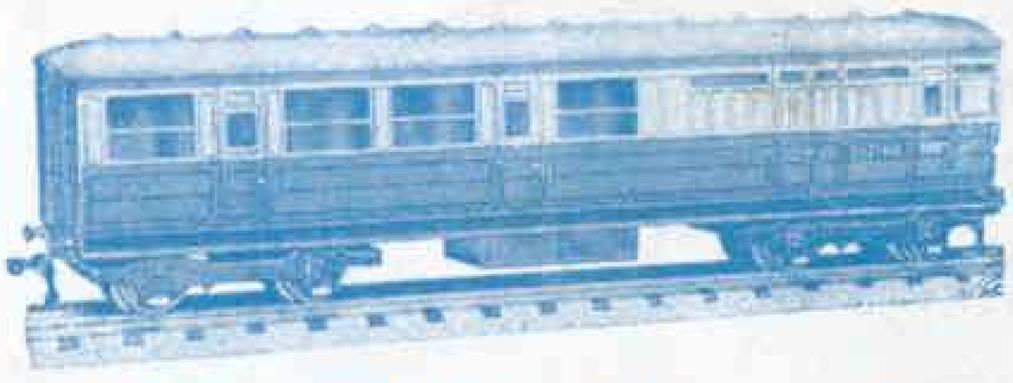
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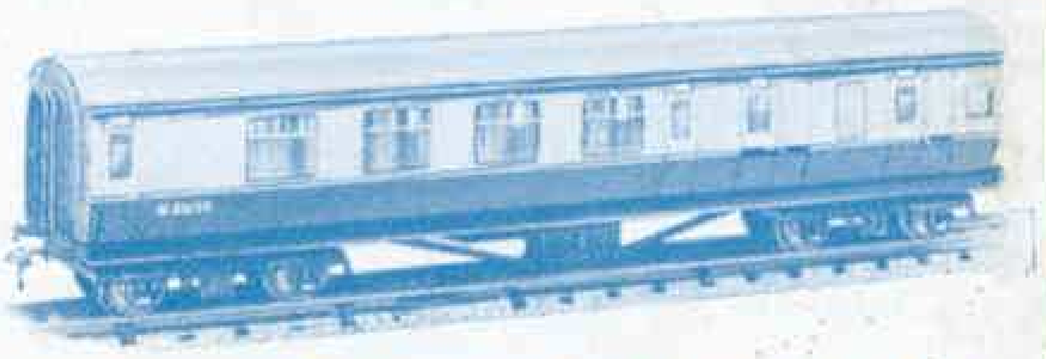
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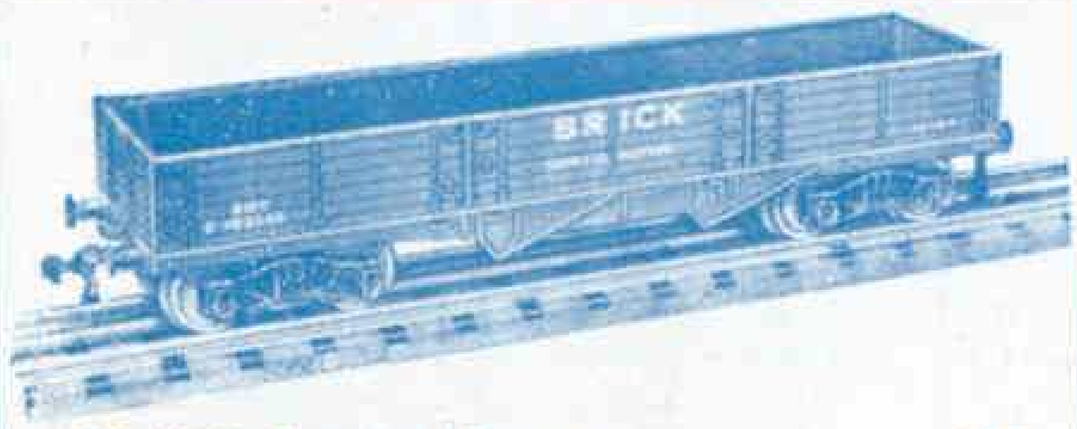

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